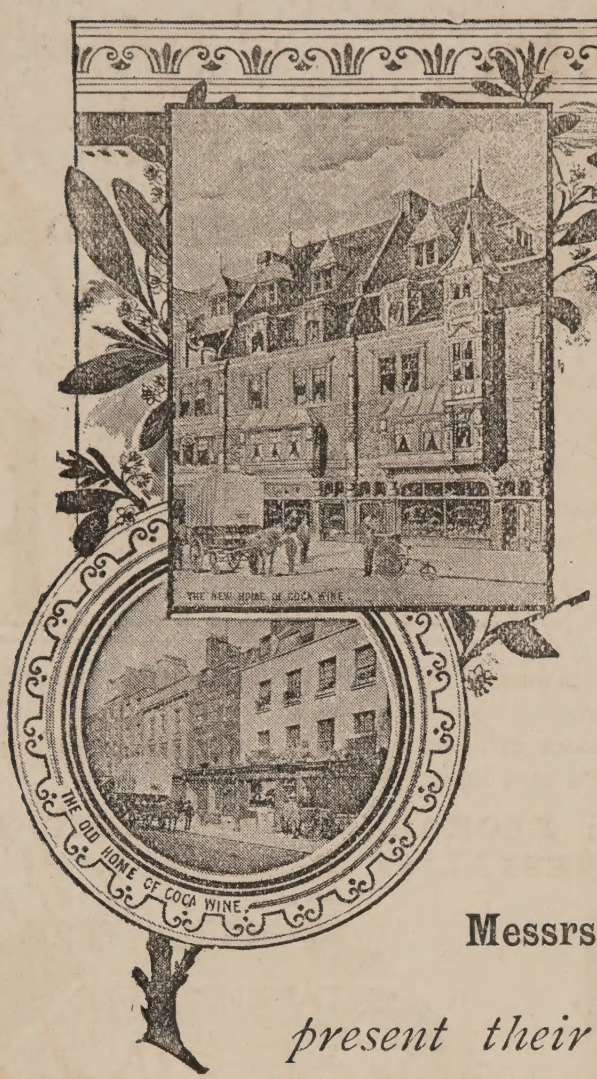

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TRANSACTIONS

OF THE

BRITISH LARYNGOLOGICAL AND RHINOLOGICAL ASSOCIATION,

DURING THE YEAR 1891.

VOLUME I.

THE F. A. DAVIS COMPANY, LONDON AND PHILADELPHIA.

1892.

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OF THE

British Laryngological Association

FOR THE YEAR 1891.

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THE BRITISH LARYNGOLOGICAL AND RHINOLOGICAL ASSOCIATION.

DR. SANDFORD, VICE-PRESIDENT, *in the Chair.*

March 20, 1891.

AFTERNOON MEETING.

AFTER the minutes of the last meeting had been read and confirmed, the Secretary read the statement of accounts, which was formally adopted.

Other business of a formal nature was transacted, comprising the election of Fellows of the Association.

Dr. SANDFORD (Vice-President) read the notes of the following *Case of Œsophagotomy in a Lunatic.* The case which I have the honour of bringing before the Association to-day is one which occurred in the Cork District Asylum, when the operation of œsophagotomy had to be performed for the removal of a large stone from the gullet of an inmate. I am indebted to the courtesy of Dr. Oscar Woods, Chief Medical Superintendent, and of Dr. Horace Townsend, Visiting Surgeon, for the privilege of doing so.

The patient, Patrick Conner, aged twenty-nine, was admitted January, 1887, suffering from dementia, and was subject to extremely violent attacks of maniacal excitement.

On February 18, 1891, he was reported unable to swallow. On passing the œsophageal tube, obstruction was experienced nine inches from the teeth. A hard substance could just be reached, but this resisted all efforts to dislodge it with ordinary instruments. The patient himself was extremely cheerful, and appeared to take a keen and half-amused interest in the proceedings.

It was determined to operate, and chloroform having been administered, it was thought advisable to make the incision at the right side, as a hard substance could be distinctly felt about an inch above the right

sterno-clavicular articulation. An incision about four inches long was made, and the œsophagus reached by dissection between the trachea and large vessels. No vessel of importance was injured, but the omo-hyoid muscle was divided between ligatures.

The œsophagus was opened in the usual manner, and a large stone extracted, weighing 620 grains—being triangular in shape—the sides of which measured about one and three-quarters of an inch, and the thickness about three-quarters of an inch. The œsophageal wound was not sutured. The external wound was sutured with silver wire—a drainage tube having been inserted.

The temperature, the first day, reached 101·4°. The patient was fed by nutrient suppositories and enemata. This continued for four days, the temperature sinking to 99° and 99·5°, and the patient appeared to be doing well in every way.

During the night of the fourth day the patient was seized with maniacal excitement, and became very violent, requiring three attendants constantly to restrain him. Hypodermics of morphia had little effect. Enemata and suppositories were injected.

During the fifth day maniacal excitement continued, and milk and brandy, beef tea, etc., were administered by a tube, but were immediately vomited through the mouth and wound. Extreme exhaustion set in towards evening, though mental excitement continued. Patient was fed through the œsophageal wound to avoid faucial irritation, and food was retained.

Sixth day. Exhaustion increased in an unaccountable manner. Temp., 95·5°; pulse, 120; respiration, 28. Patient was kept under the influence of morphia as much as possible. It was difficult to restrain him when conscious, but he was evidently sinking from prostration.

Seventh day. Patient died.

Post-mortem. The œsophageal wound showed slight tendency to heal. In the intestines eight stones were found of various sizes.

In reply to Mr. Lennox Browne, Dr. Sandford said he believed that this was the forty-seventh case on record since 1735. The patient evidently died of exhaustion due to the maniacal excitement.

Mr. MAYO COLLIER related a case of *Post-Diphtheritic Paralysis of Palate.* The patient was a coachman at Highgate, aged thirty-five, who two months before had had a slight sore throat, not sufficient to call for treatment. He subsequently developed symptoms of bronchial catarrh, for which he was admitted into the North-West London Hospital. A month later some peculiarity was remarked in his speech, and it was noticed that fluids regurgitated through the nose. He examined the man, and found there was complete paralysis of all the muscles of the soft palate. In addition to this, there was a discharge from the right ear, associated with absolute deafness on that side, and diminished power of hearing on the left side. Mr. Collier pointed out that the tensor palati muscle, according to Ross, was supplied by the sphenoid ganglion, but he had several cases on record in which disease of the intra-cranial portion of the facial nerve had been associated with complete paralysis of the levator palati.

Other cases were on record in which an affection of the intra-cranial portion of the facial nerve had also caused complete paralysis of the levator palati, and a case recently operated upon by Mr. Victor Horsley, involving the removal of Meckel's ganglion, was unassociated with any affection of the palate, showing that this could not be the only nervous supply, and suggesting that the nerve supply might be derived from two sources. He insisted upon the fact that the muscles surrounding hollow tubes were not as a rule governed by intra-cranial centres, but derived their nerve supply from ganglia in their neighbourhood, and it was therefore probable that this was the case here. This would explain the state of the parts, complete paralysis due to an affection of the ganglia of the tube.

Mr. LENNOX BROWNE observed that, independently of the anatomical considerations, he readily acquiesced in Mr. Collier's views. The case in its clinical aspects was full of interest, and was an instance not uncommon in which the diagnosis of diphtheria was only arrived at in consequence of post paralysis. He pointed out that in the last edition of his work on diseases of the throat, he had quoted a case in which Hill had diagnosed diphtheria of the anus to have occurred in the adult by the paralytic sequelæ, and from the fact that one of the patient's children had subsequently contracted the disease in the same situation, presumably in the water-closet, and had died from asthenia. That was a case in which there was grave doubt as to the nature of the trouble. Another interesting point was that this man was occupied in stables, and that Mr. Collier's patient was also employed in stables. It was a curious thing that so many cases of diphtheria occurred in persons whose occupations took them a good deal into stables. The same information had been given him by Dr. Hermann, of Capetown, who said that although the sanitary conditions of that town were indifferent, leading to typhoid, etc., yet that diphtheria was most frequently seen in the outlying districts, where the cattle were close to the dwellings. In one case, which occurred in the speaker's practice in a school in Hertfordshire, the origin was clearly traced to an adjoining pigstye. There seemed to be a consensus of opinion in favour of Renshaw's view, that the specific germ of diphtheria was due to a combination of decomposing animal and vegetable refuse.

Dr. DUNDAS GRANT observed that, when the subject of diphtheria was brought forward, it was difficult not to take it beyond the narrow limits of the paper, particularly in view of the intense interest that the subject excited among medical men, and even more so among specialists in throat diseases. It was difficult to make up one's mind which of the suggestions which the case afforded was the best one to take up. There was at any rate one moral. They had been told that the disease had expressed itself so slightly that its serious nature was not recognised at the outset, and that justified the assumption that the local treatment usual in such cases was not carried out. The one case was not perhaps sufficient to prove anything, but they all knew that the type of case in which post-diphtheritic paralysis was most marked was precisely the type in which the disease had not expressed itself definitely in the earlier stages, and in which consequently no treatment was resorted to. It behoved them, therefore, to accept the treatment of even a case of ordinary sore throat

with some sense of responsibility. He had formerly passed some years in general practice, and he attributed his success in the treatment of cases of diphtheria to his practice of careful examination of every case of sore throat, a practice which he had always insisted upon, even at the risk of ridicule at the hands of those who were less expert with the laryngoscopic mirror. The early attention to local treatment in these cases was, in his opinion, the chief agent in enabling him to obtain such good results in diphtheria. He could not say that he had not lost a case or two, but he would affirm that the cases in which the sequelæ were most marked were those in which he had made a wrong diagnosis, cases in which he had committed the error, common to every man in practice, of taking a case of diphtheria for a simple case of tonsillitis. The moral of that was that local treatment ought to occupy the very first place in dealing with cases of diphtheria. There was, of course, a tendency to overvalue local treatment, but there were many who regarded diphtheria as a constitutional disease, to be treated exclusively by constitutional means. The truth, no doubt, lay between the two extremes, but he pointed out that, after all, the general condition was not one peculiar to this disease, but was common to all diseases of a suppurative kind, viz., septicæmia. Since his experience in this department had begun, the whole science of clinical bacteriology had sprung up, and this taught them beyond a doubt that there was a specific bacillus, which was to be found in the mucous membrane and subjacent structures in animals that had been inoculated for some time, and even upon the most superficial layers of the false membranes. Dr. Ruffer, in the "British Medical Journal," had spoken very definitely as to this, and that confirmed what he (Dr. Grant) had said as to the necessity for devoting themselves to the destruction of these bacilli, which were found on the surface of the mucous membrane. To go further back, if they read Donder's "Accommodation and Refraction," upon post-diphtheritic paralysis of the ciliary muscles, they would see, notwithstanding the rough and ready observations made with regard to the frequency of this lesion, how as soon as an energetic treatment of the throat was adopted, this sequela disappeared. He referred to the Milroy Lectures, by Dr. Thorne Thorne, and observed that it was evident from what had fallen from the speaker that they were labouring under several delusions in respect of the etiology of diphtheria. It was astonishing how little it had to do with insanitary conditions. Statistics had been brought forward by Longstaff, in one of the most interesting books which it had been his lot to look through of late, the "Studies in Statistics," throwing a most extraordinary light upon this disease. It was made clear that the disease was not most frequent in the most populous districts, but on the contrary, in those only sparsely populated, where the conditions were least likely to enable insanitary conditions to affect the general health. Further, Dr. Thorne Thorne had quoted several outbreaks in which it was pretty clearly proved that there had been no origination of the disease *de novo*, but that the disease was due to infection by conditions which were called into activity from time to time. They would remember how this was gradually demonstrated in the case of typhoid fever; how cases which were supposed to be sporadic proved to have been due to infection, of

which he mentioned several instances. It was not always possible to trace the infection : no doubt the stables were to be blamed, but a great many of these cases appeared to be due to milk derived from certain cows suffering from what was apparently slight disease of the udders. It had been shown that the milk from these cows was capable of giving diphtheria to those who consumed it. Some investigations of Klein, to be shortly published, would show that the lymph from the udders of the cows would produce diphtheria in cats. These observations concerning cows seemed to him to give additional weight to the observations that had been made by Mr. Browne in reference to the distribution of diphtheria in Cape Colony.

Mr. MAYO COLLIER brought forward a case of *Symmetrical Growths (syphilitic) on the Vocal Cords.* The patient was a man, aged thirty, who had been a porter at the North-West London Hospital. He gave a well-marked history of syphilis, and several attacks of laryngeal catarrh. Within the last twelve months his voice had become somewhat hoarse, and on examining his throat he had found a well-marked fringe of warty growths on the superior part of one vocal cord, papillomatous excrescences due to syphilis, and to repeated attacks of catarrh. He subsequently removed them by the aid of forceps. He pointed out that on the first occasion of his examining the throat it was so extremely irritable that it was quite impossible to introduce a forceps even into the mouth, much less into the larynx, and cocaine remained absolutely without effect in diminishing the hyperæsthesia. Indeed, that had invariably been his experience with cocaine in relieving spasm of the throat. It was vastly inferior to simple gargling with cold water, or the use of ice, or, still better, systematic training. He had day after day passed the forceps into his throat without attempting to touch any part of the larynx, and the ultimate result of the training had been that now one might, metaphorically, sit on the cushion of his epiglottis, and dangle one's feet on the interior of the larynx without his minding it. Then he gave him large doses of iodide of potassium, and for some time he saw nothing more of him—for about three months, by which time he had quite lost his voice. He looked down his throat, and found that he had a mucous tubercle on the right vocal cord, and this he watched very carefully, ceasing the treatment in the meantime, and he found that the opposite aspect of the vocal cord became infected, and a similar growth presented itself upon it. The growths were at present absolutely symmetrical and he had no doubt that this was due to infection by contact. He adopted no local treatment, but gave him perchloride of mercury and iodide of potassium, and these growths diminished almost to disappearance. The patient then discontinued his attendance, and since then they had begun to grow again. He was anxious to retain this case in *statu quo* in order to try an instrument which he had designed for the purpose of removing growths from the larynx. It was, of course, sometimes necessary to operate without any preliminary training, and his instrument, which he proposed to call the intubating cage, was like a rectal speculum, with three springs shutting up to the size of an ordinary lead pencil. When

the instrument was perfected he intended to bring him before the Society, and show how the instrument was used. It enabled them when introduced to do whatever they pleased, and he thought it might be applicable to many other cases to prevent closure of the larynx during operation.

Dr. GEORGE STOKER pointed out that the year before last he had read a paper before the Society with regard to the administration of anæsthetics in operations on the larynx, and he had proposed the head-down position. On that occasion he had brought before the Society an instrument exactly like the one which Mr. Collier had just described, consisting of two lateral and a posterior blades. It was designed so as to permit of operation on the larynx while the patient was under the influence of an anæsthetic. In justice to Mr. Collier he would admit that, so far, he had not met with a case in which he could employ this instrument. It was eighteen times before he had ventured to operate, but some men would of course operate sooner than others.

Mr. LENNOX BROWNE asked what was the date of infection in Mr. Collier's case?

Mr. COLLIER said it was about ten years before, while he was in the army.

Dr. STOKER, in reference to the spread of the growth from one cord to the other merely by apposition, suggested that it was Mr. Collier's intention to lead them to suppose that the effect was due rather to mechanical irritation, even though occurring in a person the subject of syphilis. When he had met with this, it had been explained on purely mechanical grounds, just as ulceration at the junction of the arytenoid cartilages was liable to be communicated.

Mr. LENNOX BROWNE said he had asked the date of infection, because it was unusual for mucous patches to come on ten years after the primary attack, especially in the larynx. He asked whether there was any evidence on the fauces of the disease.

Mr. COLLIER said there was.

Mr. LENNOX BROWNE observed that this showed that the best of their theories might be bowled over. As a rule, tertiary evidences of syphilis were more ravaging than that. He was unable to concede that it was a case of infection from one cord to the other, because it was a recognized peculiarity that two vocal cords rubbing against each other would bring about a similar condition merely by irritation, and moreover, as regarded mucous patches, symmetry was a characteristic of the affection. Mr. Hutchinson had insisted upon this tendency to symmetry, to "Dutch garden" precision of distribution. It was a diagnostic point in a syphilitic patient also that he was not an irritable patient to examine, and this was a point of importance. He agreed with Mr. Collier that the effect of cocaine was very disagreeable to certain patients, and was often productive of intense spasm, lasting much longer than the anæsthetic effect. Besides cocaine, they might in cases of hyper-sensitiveness have recourse to ice or cold water; while the administration of a few whiffs of chloroform—just to the point of the patient feeling a singing in the ears without going on to general narcosis—would often enable the

observer or operator to use his instrument with the greatest success. He mentioned that he possessed instruments for intubation in the adult which had been presented to him by Dr. O'Dwyer in 1887, and were the first set made for that physician. That particular instrument had been shown at the International Medical Congress in 1887. It was exactly the same kind of instrument as that described by Mr. Collier. It did not often occur that an instrument was invented which was not used by the inventor, but it often happened that one overlooked instruments invented by others.

Mr. COLLIER discarded any idea of having forestalled Dr. Stoker. He hoped to have an opportunity of demonstrating the use of his instrument at their next meeting. He differed from Mr. Browne when he stated that they seldom met with instances in which one portion of tissue was infected by an adjacent portion. In his own experience, nothing was more common than for one mucous membrane to be infected in that way. So common was it in fact that he was enabled to diagnose syphilis from the fact. He pointed out that it often took place as between the gums or the tongue and the cheeks, and the infection of a tonsil by the tonsil on the opposite side was frequent enough. Mr. Browne's argument was one that cut both ways, and it would not do to carry it too far. It was true that they might get affections on both elbows, but he was not referring to manifestations like that, but to affections of tissues in immediate apposition.

Mr. LENNOX BROWNE said he did not dispute the possibility of infection by contiguity, but it was characteristic of syphilis in the throat that it was symmetrical independently of the apposition of parts. This could be seen in the illustrations in his work as well as in many a skin atlas. A man, who detected a sore on one side of the tongue, would be negligent if he did not look for another on the opposite side, and that came to much the same thing as the elbows.

Dr. STOKER said it was one of the difficulties of the question that cases in which there was symmetry had nothing to do with the point under discussion, seeing that the parts were not in apposition to each other. The case of a mucous tubercle on one cord giving rise to a mucous patch on the other was quite a different matter, for symmetry was due to a constitutional disease.

Mr. LENNOX BROWNE observed that this was not quite what he had said. He urged that as symmetry was a characteristic feature of syphilis in the larynx, therefore it must not be assumed that the second patch was necessarily due to infection from the opposite side.

Dr. STOKER said that in such case they would be contemporaneous, whereas in this instance the second was long subsequent to the first.

Mr. COLLIER said it was six months later.

EVENING MEETING.

Dr. DUNDAS GRANT, Vice-President, *in the Chair.*

The Hon. Secretary (Dr. Stoker) announced that the discussions and papers would in future be published in the Journal of Laryngology, and would be bound up separately at the end of the year. He also announced that the subscriptions for 1891 would become due in the month of June.

Dr. Macintyre read a paper entitled *Bacteriology in Relation to Diseases of the Throat and Nose.*

Part I.

Mr. President and Gentlemen,—In every branch of medicine and surgery the study of bacteriology has become an essential part of our work. It is therefore quite to be expected that in a Society like ours this subject should form an important part of the practice of each surgeon. Within the past two or three months, the facts known to most of us have been emphasized by the recent discoveries and attempts to base our diagnosis upon a sound and scientific basis. Without attempting to detract in the slightest from the value of the discoveries at present on trial, it will not be forgotten by those who are conversant with our literature that many workers have been for a long time doing their best to prove the necessity of early recognition of the more incipient affections, such as tubercle.

The council have decided that a discussion should take place on the study of bacteriology in affections of the throat and nose, with special reference to its influence on diagnosis and treatment; and in many respects the upper part of the respiratory tract offers an opportunity for observation unequalled in any other part of the body.

In introducing this discussion we have decided to approach the subject from three different points of view. In the first place, to refer to a few of the more important general facts bearing upon the subject, without a knowledge of which it is impossible to appreciate its true value. Secondly, to devote some time to the consideration of the results following the introduction of the micro-organisms into the tissues. Thirdly, to take into consideration the methods of treatment at our disposal.

Microscopic specimens, cultivations, diagrams, photographs, etc., have been placed before you, so as to demonstrate, as far as possible, the different points taken up in this paper.

Probably no department offers greater difficulty to the surgeon or physician than that upon which we are about to enter, and certainly in no department is it more necessary that every possibility of error should be excluded by forethought, efficient training, and careful manipulation. Indeed, in the hands of the most skilful doubt was for long thrown upon

many of the now established facts because of inefficient methods, and no one can estimate the amount of difficulty and labour later experimenters have had to undergo, in order to correct the earlier and, in many cases, misleading statements placed before the profession. No sooner have we asked ourselves, What are these micro-organisms? than we are beset with the first difficulty, because, as yet, no one has been able to classify these organisms on a scientific basis, and their true place in the vegetable kingdom has not yet been assigned. All attempts to base or classify fungi on the presence of chlorophyll or morphology must be unsatisfactory, but the true place which they occupy in Nature may be safely left to the consideration of those more particularly devoting themselves to the study of botany. It is quite sufficient for our purpose to know that they are the lowest forms of organic life, that the structure in most cases is pretty well defined, that they are, with one or two doubtful exceptions, devoid of chlorophyll, and incapable of evolving material for their structure from organic matter. As they mostly multiply by division, the term "Fission-fungi" has been given to them, and so they are classified as "Schizomycetes."

We have comparatively little interest in any of the other forms of fungi, although the mould-fungi, or fungi proper (Hyphomycetes), in some instances are interesting from their pathogenic action in the lower animals, mainly in insects. Yeast-fungi (Blastomycetes), so far, are only of interest to us in the single instance of thrush, while the animal-fungi (Mycetozoa) have not received sufficiently careful consideration to make them of anything like scientific value to us at present.

A great amount of interest has been excited of late in the theory involving the parasitic nature of infectious diseases, and the causal connection between micro-organisms and specific affections has to a considerable extent overshadowed the other parts of this study. If, however, we wish to understand the action of these organisms upon the tissues, it must never be forgotten that bacteria may be found in the body perfectly harmless. Secondly, they may perform physiological functions, and, as we hope to show in this paper, they may even have a beneficial effect in certain pathological conditions. It is therefore necessary to recognise the form, function, and general vital phenomena of micro-organisms before taking up those which are really or doubtfully pathogenic in nature. Ever since 1828, when Ehrenberg proved the presence of minute living organisms constantly in our surroundings, the subject has given rise to great interest. Caignard Latour and Schwann eight years later did great service by demonstrating the vegetable nature of yeast. This discovery might be looked upon as the foundation of the vitalistic or true germ theory, and Schwann in his later work, in 1837, by asserting that in the air there are present fermentative and putrefactive germs, led to the causal association of these in the minds of men. Before this time the association of micro-organisms with the fermentative processes was considered an accidental one, or at the most, that the cells might act so as to condense the oxygen and pass it over to the other substances, and so produce the decomposition of the sugar. To prove that the process was really a physiological one it was necessary to demonstrate that living cells were present in all fermenting fluids, that by the exclusion of these cells the

process would not be developed, and in this connection the names of Van de Broek, Pasteur, Lister, and Cheyne will be for ever remembered. It is needless now to refer to the magnificent work which demonstrated these two important points, nor to do more than mention the names of Ehren, Tyndal, Pasteur, Cohn, and Sanderson, who did so much to show that these fermentative organisms are carried everywhere, and that, unless carefully excluded, fermentescible substances will undergo this change. Although these facts were placed on a comparatively sound basis, the work was by no means complete, and that of Pasteur, in his researches upon the different kinds of micro-organisms giving rise to different and specific actions, can never be over-estimated. The progress of the vitalistic theory from the assumption that one ferment only existed, to that in which it was shown that numbers existed, and that each might have a specific action, was an important step in the history. The objections to the theory, such as fermentation in spite of supposed exclusion of germs, the presence of minute living forms in fermentescible fluids, the comparatively small power which micro-organisms showed in the breaking-up of albuminous solutions, and the presence of so-called chemical fermentatives, are now of little more than historical interest. The sources of errors in the experiments on the one hand, and the hypothetical views of the chemists on the other, are now of comparatively little value, except in the sense that they afford us examples of the necessity of great care and attention in manipulation in order that the progress of science may not be hindered. There can now be little doubt in the minds of most men about the association between these germs and the processes above referred to, although an amount of doubt exists in the minds of some about the parasitic nature of germs in the production of disease ; that is to say, while it is generally admitted that they may, by their life processes, destroy organic material, split up higher into simpler compounds, afford nutrition for the higher plants containing chlorophyll, and produce fermentation, yet for a considerable time a line was drawn between these and the possibility of minute plants producing disease in the lower and higher animals. But the possibility of this is by no means a new idea, for Miller tells us that Varro, in the first century B.C., suggested that epidemic diseases might be due to some invisible element—a *contagium vivum.*

Early in this century Bassi placed this on a somewhat satisfactory basis, and in 1838, Pouche clearly proved the causal association of the mould-fungus with disease. In 1840, Henle's deductions on this produced a great influence, and ever since then the theory of the parasitic nature of disease has been advancing, although each step has been vigorously opposed. The result has been the magnificent work of Pasteur and Koch, and for the particular methods of investigation of the latter the scientific world must ever remain indebted. Koch may or may not be estimated in the future by his cure of tuberculosis, but the work done by him in the study of these organisms, in the methods of cultivation outside the body, the isolation of different species, and his discovery of the bacillus of tuberculosis, will ever be regarded as classical landmarks in the study of infectious diseases. It may be, as some even yet assert, that the

bacteriological question has been too far pushed in medicine, but those who are at all sceptical of the causal association of these micro-organisms will have great difficulty in disproving the mass of facts which are now being placed before the profession from all parts of the world. In fact, we might fairly state that there are few things in medicine resting upon a surer basis than the parasitic nature of disease, and the facts made known by Koch on tubercle alone are sufficiently convincing, and we must remember that there are affections less doubted than it.

It must not be forgotten that it is no mere accidental or common association to find these organisms in the tissues, because before an organism is considered to be the cause of a particular affection it must have been found in the blood or tissues of the animal affected. It must also have been cultivated through many generations outside of the body, and after reintroducing it into the tissues of another a similar affection must be produced. Lastly, the same organism must have been found in this second host and cultivated again outside of it, to place all possibility of coincidence or accident out of the question. We are forced to the conclusion that the parasitic theory of disease is not only the most rational, but one which leaves no doubt upon the minds of those who have carefully carried out the experiments in a typical case, or who have even had the advantage of seeing others do so.

These organisms consist of minute, round, oval, or cylindrical cells, devoid of chlorophyll, and requiring already formed organic compounds for their life. They vary in size, measuring transversely on an average ·0001 m., and two to four times that measurement in a longitudinal direction. The cells have no nucleus, are composed of protoplasm, and the small and most of the larger forms have a homogeneous translucent appearance. Some of them in their substances or membranes, should they have the latter, show distinct colours. For the most part they are produced by fission, in others by spores, and it may be by separation of a portion of the cells from the original cyclus. Antagonism between the different kinds of bacilli has been noted, and in cultivating several generations of different species by a process of exclusion it comes about that in the end we may only have one instead of a number present, as if the strongest had crowded out the others. Lastly, it may be that their products, through too great acidity or alkalinity, may arrest their own growth—in other words, to a certain extent they are self-destructive. Speaking more particularly, they may be considered as (1) having an action on lifeless matter, zymogenic or fermentation bacteria ; (2) chromogenic or colour-forming bacteria ; (3) ærogenic or gas-forming bacteria ; and (4) saprogenic, or those that produce putrefaction. In connection with these, we must ever remember that the products of living organisms vary, and so they may be harmless or prejudicial. The best example of the latter are the ptomaines, which are now being so carefully sought after, and whose physical properties are being so thoroughly investigated.

A few such, as some of the spirilla, have a reaction something like that of starch with iodine ; others, particularly the sarcinæ, have a distinct membrane. Some are movable and capable of a rotary movement or oscillation, and, as Loeffler has shown, have cilia. The analysis of their

construction is as follows : Water, 84·81 per cent. ; albumen, 13·03 per cent. ; fat, 1·20 per cent. ; ashes, 0·64 per cent. ; residue, 0·32 per cent. (Nencki). A glance at this composition is interesting considering the nutritious material upon which we usually cultivate them, consisting as it does of albumen, carbo-hydrates, and a small quantity of salts. Temperature in excess in either direction has a great effect upon them, 25° to 40° C. being the range ; above this and below 5° C., growth is retarded or arrested. Some of them require oxygen for their development and are termed ærobic ; some anærobic are independent of this gas, while others will grow for a time with or without oxygen. Acids and alkalies in excess retard them, while light and electricity have not been found as yet to have much effect upon them.

It may have seemed quite unnecessary for us to point out these physical characters, but we have not done so simply to remind you of the vital phenomena of these organisms, but rather by way of suggestion, because many of the facts which we have mentioned have been taken advantage of by different workers in therapeutics. For example, the rendering of the soil unsuitable for the growth of the specific germ lies at the bottom of Koch's work. The arrest of the growth of these germs by temperature has been attempted by means of the apparatus for inspiring hot and dry air, and others have attempted to arrest their growth by keeping the patient in cold air. Again, experiments have been attempted to do this by means of the stains in use for detecting the different species. Attempts have also been made to use acids and alkalies, and the antagonism of these organisms has even been utilized by the inoculation of tumours, lupus, etc., with the streptococcus erysipelas. In fact, there is no observation about the vital phenomena above mentioned which has not been carefully weighed in the hope that it might be turned to some therapeutic use. There only remains, therefore, in this part of the paper to refer to one other feature, viz., the forms which those bacteria assume. In doing this we have found it advantageous to adopt De Bary's simple classification.

Three main forms are distinguished. The round forms are commonly known as cocci, and the terms "micrococcus," "diplococcus," etc., in such frequent use, explain themselves. The term "bacterium" was intended for short straight rod forms, but is not so frequently used in classification. The rod-like forms are now grouped under the head of "bacilli," and the third are the spiral or corkscrew form, "spirilla." By the combination of several cells, varieties of the above may be formed. For example, we may have streptococci or those in chains, groups of staphylococci and zooglæa forms produced by the gelatinization of the membrane, and so on.

Under the microscope typical forms of the bacteria have been placed, and on the screen a number of photos of them will be shown later in the evening.

Part II.

There can be little doubt that many of the parasites found in the body, and particularly those lying in the mouth, are comparatively harmless, or at least as far as we know are harmless, to the host on which they live : but some of these same organisms, or their products, are by no means

harmless when injected into living animal tissues. It is possible, as we shall attempt to show, that in some instances at least they are useful in removing dead material which might otherwise become injurious. Again, there can be little doubt, from careful investigations recently made, particularly in the alimentary tract, that some micro-organisms have a distinctly physiological action in producing certain changes in the gastric juices. But for our purpose to-night, the most important consideration is the pathogenic action, local or constitutional. Anthrax, relapsing fever, leprosy, tubercle, lupus, erysipelas, diphtheria, typhoid, pneumonia, syphilis, and the suppurative processes are but a few of the diseases which are now claimed to have a specific organism producing the affection.

We will therefore pursue this part of the subject in the following order:—Firstly, the parasites found in the bodies of apparently healthy persons, and which are considered harmless; secondly, parasites which may have a function in maintaining the healthy economy; and lastly, a few of the above-mentioned diseases which have a particular interest for us.

If anyone take the trouble to scrape a little of the mucus from the lining of the nostril or the mouth in an apparently healthy subject, a great variety of micro-organisms will be found, and without a knowledge of some of them at least, it will be impossible to make any investigation of a more specific nature. In the nostril, for example, a considerable number of cocci are always found, large and small, and several bacillary forms are continually present. Specimens of these have been placed under the microscopes. These may be mixed considerably with the spores which are usually found in the atmosphere, and which give us trouble if a cultivation be attempted from the mucous surface. A considerable number of investigators have entered into the study of these forms, and at a future period of the Society we may take the opportunity of entering more fully into the varieties (so-called) of these organisms. Generally we have found more than one form of the rounded cells, but whether they are the same organism in different stages of development, or distinct species, it is impossible at present to say. The bacillary forms will also be seen under the microscope.

This department offers good opportunities for investigation, because some are inclined to think that one of these rod-like forms is the cause of hay fever. De Bary's remark upon this is extremely useful. "With "regard to the supposition," he says, "that bacteria are ever present in "the catarrh of the cavity which goes by the name of hay fever, I can "bear out this fact, being a sufferer from that malady, though I must "add that bacteria are also present during the ten to eleven months of "the year that are free from hay fever."

In the mouth the investigation of bacteria becomes more difficult, owing to the new germs which are constantly being introduced by the food and drink. Millar has isolated over one hundred varieties in the course of some years, and if a research of this nature were prolonged, it is not unlikely that all the known forms of germs would be discovered in the buccal cavity. It has been customary to describe four main forms,

and a diagram of these will be thrown upon the screen later in the evening. They are described by De Bary in the simple form of (1) leptothrix buccalis ; (2) masses of cocci ; (3) a spirillum form ; and (4) a bacterium. Millar classifies the mouth-bacteria proper further into (*a*) leptothrix innominata ; (*b*) bacillus buccalis maximus ; (*c*) leptothrix buccalis maxima ; (*d*) iodococcus vaginatus ; (*e*) spirillum sputigenum ; (*f*) spriochoete dentium.

An obstacle to obtaining a knowledge of the true nature lies in the fact that none of the mouth-bacteria proper will grow upon the ordinary culture media.

Some writers very properly object to the loose way in which the term "leptothrix buccalis" has been applied, and Millar applies the term "leptothrix innominata" to the bacteria grown in threads, whose biology is too little known to define their relation to other mouth-bacteria, or to form a separate group with distinct peculiarities. By scraping a small portion of the tooth these forms can easily be seen, and, in addition, we find the others above mentioned.

Bacillus buccalis maximus consists of isolated bacilli, or sometimes threads lying parallel to or crossing each other 30 to 150u. long, and distinctly articulated, the individual cells measuring 2 to 10u. in the longitudinal and 1 to 1·3u. in the transverse direction. It turns blue on the addition of iodine.

Leptothrix buccalis maxima. This is an organism consisting of long, thick or slightly curved filaments, resembling the last, but not articulate, and not giving the same stain with iodine. It may possibly be a variety of the last.

Iodococcus vaginatus is found singly, or in chains formed of four to ten cells, appearing as flat discs, or it may be somewhat rounded or square bodies lying in a membrane. The former takes on the stain with iodine, the latter does not. The chains have a diameter of 0·7u.

Spirillum sputigenum occurs in the form of rods curved like commas, showing spiral movements, and fission not taking place, S-like forms or short spirals may be produced.

Spirillum dentium consists of spirals from 8 to 25u. long, and are capable of movement.

Owing to the difficulty in cultivation, it is at present impossible to say how many of these forms of bacteria are merely varieties, but to show the extent to which the subject has been developed, not fewer than twenty-two different organisms have been recorded.

Under the microscope the more common forms of these will be found.

Some of these forms may have a function in maintaining the healthy economy, and would, therefore, come under the second heading ; but our information at present is too indefinite to permit of an expression of opinion. Like many others, we have long thought the offensive smells in œzena are due to chemical changes by means of which clear material is to be removed. That this decomposition is due to micro-organisms is more likely, and under the microscope will be found a few of the bacillary forms taken from a typical case of œzena.

PATHOGENIC FORMS: *Tubercle.*—We have placed under the microscope a number of specimens from cultivations of the bacillus tuberculosis, and sections showing the organisms in the tissues. This organism is now so well known and the vital phenomena so thoroughly understood, that it is quite unnecessary to spend time upon it. It may be more interesting for the Society to see a pure cultivation on agar-agar after fourteen days' growth kept at a temperature of 40° to 50° C. In the tube the organisms will be seen growing in their typical thread-like processes, and not liquefying the medium in which they grow.

From the time that Klencke, Villemin and others demonstrated the inoculability of tubercular tissue until the publication of Koch's classical work on the subject these organisms have continued to excite profound attention. When we read in his first communication of something like 217 animals of different kinds experimented upon before any conclusion was arrived at, one gets an idea of the immense work which must have been got through to have placed this disease upon a sure basis for diagnosis and experimental treatment.

Lupus.—It will not be necessary to consider lupus fully any more than in the last instance. It is an affection of interest to us because doubt has been thrown upon the identity of the specific organism which produces it and tuberculosis. There can be no doubt about the bacilli closely resembling each other, but everyone working at throat and nose affections is struck with the clinical facts of the case in the sense that the two affections may be considered as quite distinct. Various theories have been formed to explain the immunity which the nose and mouth enjoy from the presence of tubercle. It has been asserted that the flow of mucus to the surface may prevent the entrance of the bacilli. It has also been suggested that the cilia may prevent them entering the tissues, and, further, it has been thought that the structure of the parts is such as to render them less inocuous. This view, to our mind, is by no means the least likely, because, as we suggested at a former meeting of this Association, different affections seem to attack different tissues. The very disease of which we speak, lupus, is oftenest seen in the skin—an epiblastic structure, and if we reflect for a moment we find that when the disease passes into the oral and nasal cavities it is also into the epiblastic structure. On the other hand, phthisis laryngea, as a rule, begins in the hypoblastic structure, and it is not as common to find tubercle in the skin as in mucous membranes.

Diphtheria.—Passing to the more acute diseases, diphtheria next claims our attention. Since the time of Bretonneau this has been looked upon as a specific and contagious disease. The possibility of having recognised the true organism has been for long doubted, and in our country the workers in this department have been comparatively few. In a visit to the French capital two years ago we were struck with the number of those who, both from a bacteriological and clinical point of view, looked upon the cause of the affection as now being quite established. For example: Dr. Jules Semon writes, "Toute fausse membrane qui contient ce micro-organisme "est diphteritique, toute fausse membrane qui ne le referme pas n'est pas "due a la diphterie."

Klebs, in the Wiesbaden Congress in 1833, made the statement for the first time that these organisms were to be found in the false membrane covering the mucous surfaces. Loeffler, the next worker in this subject, made a most important series of observations on twenty-five cases in which he found the bacillus. Pure cultivations were made, and inoculations of them reproduced false membranes in various animals, such as pigeons, rabbits, &c., particularly when applied to the excoriated surface of the conjunctiva, cornea, trachea, &c.

Intravenous and subcutaneous injections produced the same result, but this first paper rendered the experiments doubtful because of the presence of bacilli in health; also, because in some typical cases the bacillus was absent. Loeffler subsequently published a communication giving ten cases in which he had found these organisms, and Hopfmann confirmed a part of these results. Roux and Yersin next took up the study. The work which they did is to be found in "Annals of the Pasteur Institute," and, briefly summarized, they claim to have found the bacillus in fifteen cases, and to have produced the typical paralysis in animals inoculated. Lastly, they have produced the paralysis without the living germs, by separating the poison and injecting it. As this is a department which may be of considerable interest to us for diagnostic purposes at least, it may be useful to point out that scrapings of the false membrane often show this bacillus. Perhaps the simplest way of searching for them is by inoculating a tube containing blood serum or agar-agar. Sometimes almost a pure cultivation of them may be got in this way. Loeffler recommends the best medium to be three parts of sheep's blood serum, one part of veal broth, one per cent. of grape sugar, half per cent. of common salt. The bacilli easily grow at 37° C. The colonies will be seen to grow in round or oval dark brown discs; by these running together irregular figures will be formed. From microscopic specimens shown here it will be seen that these vary much in length, but the average is much the same as the tubercle bacillus. One or both ends may be swollen, and so the bacillus may take a distinct club-like form. With methylene blue they readily take on a deep stain. There is not uncommonly the appearance which gives one the idea that they are composed of short rods, with irregular outlines. Difficulties in this investigation may be summed up as follows :—

Firstly, that these organisms have been found in the membranes, but not in the internal organism.

Secondly, we may have a number of organisms present in the membrane.

Thirdly, the lower animals are by no means so susceptible to this as to many other poisons.

Lastly, the suggestion has been made that different forms of diphtheria may be due to different infective agents.

Roux and Yersin, like Klebs, find these bacilli at the deepest part of the layer of exudation. They recommend that a platinum needle should be passed into the false membrane, and that the surface of matter in the tube be streaked, and they further recommend that the same needle should be used—without taking any more material from the false mem-

brane—to inoculate a number of other tubes, because the first are usually too profuse in their growth to give satisfactory results, whilst the latter is often little short of a pure cultivation. Specimens of tubes containing cultivations of the bacilli have been placed before you.

In eleven cases which we have investigated the bacillus has been found in seven, but from the clinical standpoint it is difficult to make any definite statement, because while Roux and Yersin speak of having found this bacillus in fifteen cases, Pruden states that of twenty-four cases where early autopsies had been made the only species of parasite present in all but two was what he calls streptococcus diphtheria. In addition, about twenty other different forms of bacteria were isolated. According to this writer, in no case was the bacillus of Loeffler to be seen, but it is to be noted that the investigation differs from the above in the fact that the others were taken from the membrane during life.

Considering the extreme difficulty of diagnosis in many cases of diphtheria, and the many attempts which are now being made to treat it on an antiseptic basis, nothing could contribute more to confirm or disprove these views than were the Association or its Fellows individually to make a systematic examination of the membrane in each typical case of diphtheria presented to them.

Syphilis.—A considerable number of writers have made statements, many of them erroneous, in this affection, but lately Lustgarten has shown specimens of the bacillus in the specific tissues. His special method is staining in aniline gentian violet solution and subsequent decolorization by sulphurous acid. In form the rods are usually bent or slightly S-shape, four and a half millimètres long, with slight knob-like swellings at the ends. Control experiments have been made by others, and at present the organism is only doubtfully accepted as the cause of the affection.

Pneumonia.—Although of less consequence to us, and more by way of comparison, we have placed under the microscope the two organisms usually associated with this affection, viz., Fraenkel's and Friedländer's bacillus.

Suppurative Processes.—The organisms found in this, which are of interest to all surgeons, are also shown under the microscopes.

Cancer.—Considering the attitude of the different observers at present, it is not necessary here to say much of the organism which has been recently claimed by Dr. Russell, of Edinburgh, as having a causal association in this affection. Further investigation is required.

The importance of a knowledge of these forms cannot be overestimated. In tubercle, the necessity of early recognition of the disease by the presence of the bacillus has been emphasized of late, and in this connection no one has done better service than Dr. Hunter Mackenzie, who for years has brought the importance of the subject before us.

We have not been as successful in finding the bacillus of tuberculosis as the last-mentioned authority. After careful examination our opinions might be formulated thus: (1) The expectoration ought to be examined in every case; (2) the presence of the bacillus is a positive fact of the utmost value; (3) the absence of the bacillus proves nothing; (4) in many

cases the diagnosis can be made quite independent of it, and that in an early stage.

When one meets with doubtful cases of acute disease, particularly of a diphtheritic nature, one cannot help reflecting how useful it would also be were a specific organism found in the false membrane, and that organism proved to be the cause of diphtheria.

Part III.

In passing to the consideration of the third part of the paper it will not be necessary to occupy much time, because everyone here is sufficiently familiar with the subject from a therapeutic and practical standpoint. Let us consider briefly, however, in what direction we can expect protection from the invasion of these organisms, and more particularly with a view to finding if there be anything to help us in our department.

1st. *Inoculation.*—While recognising the immense benefit of this in one affection at least, no one will be bold enough to suggest that inoculation of all diseases should be performed at an early age. The experiments of Pasteur in introducing the poison after the disease has been communicated to the individual, if it could be applied to other affections than hydrophobia, would be of great advantage, but at present we as laryngologists can hope for nothing from this method.

2nd. *Prevention by exclusion of the entrance of germs.*—There can be no doubt whatever of the great work done by Lister in this way; but unfortunately, the greatest part of our work lies in the treatment of individuals into whose tissues the germs have already been introduced. Doubtless, isolation of persons suffering from infectious diseases protects others, but it does nothing for the individual affected.

3rd. While the interesting researches of Mentschicoff show that certain organisms meet with considerable resistance in the tissues from certain cells therein, we cannot hope for much practical benefit from this observation as yet.

4th. *Agents which will destroy the organisms found in the tissues.*—The numerous remedies which have been employed in the hope that the bacillus may be destroyed within the body is a sufficient testimony to the earnestness with which the subject has been pursued; but all will acknowledge the careful observation and immense service which Rosenberg and Krause have rendered by the introduction of menthol and lactic acid.

We are, however, forced from observations to place ourselves among those who hold that neither intra-laryngeal nor intra-thoracic injections, nor yet spray, gargle hot or cold, nor inhalations, have been yet proved as satisfactory antiseptic treatment. The possibility of internal administration of remedies by the mouth, or subcutaneously, may in the future accomplish more. At least we might hope so from our experience of perchloride of mercury in syphilis, and the favourable results recorded by Jacobi when this agent is given in acute diseases, such as diphtheria.

In the last-mentioned disease the difficulty to our mind arises in this way—that one cannot administer much of such a poisonous agent in the short period at our disposal, while in specific diseases small doses for a considerable time may be expected to affect the micro-organisms without

seriously injuring the patient; and doubtless this has led to the attempts to administer other remedies of a similar nature, *e.g.*, salicylic acid. In this connection, along with Professor Charteris, we have made a number of experiments with the phenol series, and have been able to satisfy ourselves that even carbolic acid is probably more dangerous on account of its impurities than from its own poisonous properties. For example, eight grains of ordinary acid have invariably killed rabbits injected, whilst the same dose of pure acid has in a few instances only had this result. We do not claim by this to have discovered a cure for anything, but place the facts before you more by way of suggestion than anything else.

5th. *By rendering the soil unsuitable.*—In this way Koch hopes to overcome what has proved such an obstacle to experimenters who devote themselves to the method described in the last section. As far as we are concerned, we had as little sympathy with the great wave of enthusiasm which resulted from the announcement of this discovery as we have with the condemnation which it is now receiving in many quarters.

Time alone must settle the permanency of the improvements which undoubtedly have taken place in some, though it may be few, of the cases. In the case of lupus, which we have had under our observation, the improvement which was noted at first has by no means proved of a permanent character. This is the more to be regretted as no other known method had had the least beneficial effect upon our patients before this remedy was tried. It may be that we failed to bring the auxiliary aids in the way of curetting or constitutional agents to secure permanency, and it is possible that a desire to test the remedy by itself led to this probable error. We have carefully recorded all the local and constitutional changes which the remedy is known to produce, and prefer, in the meantime, to reserve our opinion. Of cantharidinate of potash we have no personal experience.

Gentlemen, in reading this paper we have attempted (1st) to bring the important facts of the vital phenomena before you by way of suggestion; (2nd) to describe and show those forms which are of interest to us by way of diagnosis and treatment; and lastly, to draw your attention to the therapeutics. In a subject so wide as this it may be well to ask the expression of the Society in the discussion which is to follow upon a few of the more important points, and in this way we would suggest that we might consider the following :—

(1st) That the Fellows give expression to their views upon the causal connection of these germs; (2nd) that granting this causal connection; what value do they place upon it for diagnostic purposes; (3rd) what methods, or agents, have they found of most benefit in chronic affections such as tuberculosis, and in acute conditions like diphtheria.

Some time ago I heard our ex-president, Sir Morell Mackenzie, refer to the difficulties which the surgeon or physician now had in following out any pathological investigation, and his view seemed to be that the pathology and etiology must be consigned to those engaged in laboratory work alone. Whilst sympathizing in every sense with this view, it appears to me that the pathologist, after all, is only like one in advance,

who prepares us for the application of these discoveries at the bedside. To those engaged in practice like myself it would be needless to claim more, and in this secondary sense only have we ventured to bring this subject before you.

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Discussion on Dr. Macintyre's Paper.

Dr. Dundas Grant said that the first thing they had to consider was the relationship between these micro-organisms and the diseases with which they were associated. So long as Koch's four requirements were observed, this connection was clear enough. There was the further question of the antagonism of different kinds, which was illustrated by the antagonism between the microbes of erysipelas and of lupus. What the nature of this antagonism might be it was impossible to say. Much still remained to be done in the way of identifying these organisms, either by studying their natural history or their reaction to stains. The next thing would be to classify and mark out the diagnostic table of these appearances, and if the author could tabulate them in this way they would be under a further debt to him. Passing on to the pathological micro-organisms he observed, in reference to the existence of an organism of lupus, that those

who had heard of it were far more numerous than those who professed to have seen it. He himself had never been able to identify it, and when he asked several experienced bacteriologists they too had confessed not to have done so, though they knew someone who had. At the same time he admitted that the evidence of inoculations in the lower animals seemed to point to a close relationship between lupus and tuberculosis. He alluded to the distinction between epiblastic and hypoblastic blastoderm in relation to the various micro-organisms, which he thought was stretching the point rather far. There was, at any rate, no immunity as concerned the larynx. Again, it could not be stated absolutely that the mouth and nose enjoyed any immunity from tubercle, for it had been met with often enough on the tongue and palate, and in the nose, sufficiently, at any rate, to deprive the analogy of a great deal of its force. No doubt the respective areas offered different facilities for the growth of micro-organisms. Passing on to discuss the dwelling of the microbe he observed that it had not been found in the blood of infected animals, and the author's observation pointed to their being found in the deeper layers of the membrane in diphtheria, and, according to Ruffer, in the most superficial layer of the membranes. The moral to be drawn from these observations was of the necessity for early treatment of cases of diphtheria. It was only right to say that Ruffer's observations were carried out on sections taken from bodies after death, and, as Dr. Macintyre had pointed out, that might make a difference. The apparent want of accord between the observations of Ruffer and of the author might thus be explained. The bacillus of syphilis could not yet be said to be within their ken. That of pneumonia was interesting, but had still not been made out. The coccus had turned up in the middle ear and might possibly be found elsewhere. He referred to a paragraph which had recently appeared in the "Lancet," giving a simple plan for detecting the presence of the bacillus of tuberculosis in the sputum, by mixing the sputum with a weak solution of caustic potash, boiling and precipitating. The formed products of the bacilli were precipitated along with the rest, and by conducting the process in a conical glass, it was possible to make out its presence even if in very small numbers. He pointed out that a negative result, when searching for the bacillus, did not absolutely show that none were present, for in certain cases which clinically had been recognized to be tuberculous, none had been found. In conclusion he urged that the time had now come for them, as far as possible, to arrive at a definite opinion in respect of the value of Koch's fluid, and it would be an opportune moment to elucidate the matter and say definitely what its value was in the treatment of tuberculosis. As the subject was formally before them in reference to some cases to be shown by Mr. Browne, he suggested that special attention should be devoted to this point.

Mr. LENNOX BROWNE said they had before them a much larger subject than that of Koch's treatment, though he doubted whether there were any present who were in a position to discuss the paper; he himself, at any rate, did not feel equal to it. Within the limited time at his disposal, he had not been able to digest the facts which the author had

brought before them. He expressed his admiration for the essentially clinical character of the paper, which smacked of the ward rather than of the laboratory. Dr. Macintyre has said that he (Mr. Browne) would make some remarks as to the early recognition of tubercle in cases in which no bacilli could be found, though admittedly of a tuberculous nature. No doubt the method of precipitating the solid matter from the sputum by caustic potash and boiling would facilitate the search, but certainly the ordinary quick methods were eminently unsatisfactory, so that when they did not find them their diagnosis was not necessarily negatived, though it might be made more conclusive when the bacillus was found. The important thing to remember in pursuing a treatment for tubercle was the author's remark that one possible reason for the failure of Koch's treatment was the neglect of the accessory measures. Touching the identity of the bacilli of tuberculosis and lupus, he had not yet succeeded in seeing a bacillus of lupus at all, and was not therefore in a position to discuss that question. To describe lupus as a typical form of tuberculosis was, he thought, an obvious mistake, and he was disappointed to find that Liebreich had taken lupus as a test to try the effect of his cantharadine treatment in arresting tuberculosis. A certain amount of caution was, therefore, desirable. He agreed that tubercle was developed comparatively seldom in the upper respiratory passages, and it was by no means an association of all cases of pulmonary disease. It was, however, met with, and occasionally it was undoubtedly a primary manifestation. The discovery of the bacilli of diphtheria in the superficial layers of the false membrane was doubtless an important point, but as they had to deal with living patients, it was desirable that they should carry out their observations upon them, and not upon bodies in the *post-mortem* room ; in fact, he thought that it would be safer to ignore researches made on the dead. He agreed as to the attention to the local treatment, but he asked what that local treatment ought to consist of. If only the superficial layers contained the bacilli, no doubt rubbing the throat might be of use. If the deeper layers were infected it was another matter. They used to be told never to remove the deeper layers, because membrane would certainly form again, and doubtless if they kept tearing them away they could only do harm. He thought that Watson Cheyne was the first person in this country to inculcate the tearing away of the deeper layers and treating the raw surface, and that plan was well worthy of their consideration. He thought that a change of views was desirable concerning the undesirability of removing the deeper layers of the false membranes, for it might be of service to treat the raw surface. That was to be deducted from the fact that in the living subject the bacillus was to be met with in the deeper layers as well. Then came up the question of the constitutional treatment—a very important point. They all made at present for the mercurial treatment of diphtheria, and he preferred the biniodide to the perchloride, because it did not precipitate albumen, and had a better effect on the membranes than the perchloride. Dr. Macintyre said that in an acute disease like this there was not time to attack the disease, and that remark should be borne in mind ; also his remark that it was possible to do things with

pure carbolic acid which it would not be safe to do with the impure product. The changes which had taken place in regard to the use of carbolic acid in Lister's methods might perhaps be due to his having used the impure acid, so that his carbolic spray was perhaps, after all, not so wrong as those had asserted who now derived the benefits of his discoveries. He hoped that at an early meeting of the Council of the Association some suggestion would be made to appoint a committee to carry the subject further. He looked upon the work of the evening as among the best they had done. They wanted more work in this direction and of this kind. Records of cases were interesting, but work such as that which Dr. Macintyre had done was what was wanted to justify the existence of the Association. Dr. Macintyre, in coming so many hundred miles to read his paper, had put the Association under a debt of gratitude.

Dr. CAMPBELL said he was very pleased to find that, working quite independently, he had arrived at the same conclusions as the author, in respect of the relationship of lupus and tubercle. With all deference to Koch, he felt bound to say that their identity was, in Scotch legal phraseology, not proven. Kaposi had urged that in this manner the clinical aspects ought always to override the purely speculative.

Lupus was a disease of long growth, and was long in developing itself. Had it been tuberculosis he presumed the patient would have been dead long ago. He pointed out that lupus attacked the orifices of the mouth, nose, &c., but so did tuberculosis, but if the two diseases were identical, why did they not run a similar course? They did not get implication of the lungs in lupus, nor dysphagia or discomfort. None who had tuberculosis of the throat survived five years, to put it at the outside, yet he could show two cases of lupus of the throat which had existed, so to speak, from time immemorial. Then again, in lupus, after many researches, he had found a bacillus which resembled that of tubercle, but how many others were there that resembled the bacillus of tubercle? The dog and the wolf were both of the genus *canis*, but they were very different animals, and he thought that the experiments to prove the ideniity of these two bacilli were failures. Some years ago he had read a series of experiments conducted in Paris. The series was a long one, but there were only two positive results out of fifteen. Considering the conditions under which the guinea pigs were kept during the carrying out of the researches, he thought that there were plenty of other ways in which they might have contracted tuberculosis. He had bought dead animals at Leadenhall Market, and found that they had died of tuberculosis, without having been inoculated at all, and he asked what was to prove that the tubercle in these test animals was not of fortuitous origin. There was a far deeper question as to why pathogenic organisms sometimes took root in the organism, and sometimes failed to do so. The fundamental principle was that the perfectly healthy body was proof against any infection whatever. He mentioned that years ago in Edinburgh, in the fever wards, there was a nurse, a strong healthy woman, who had faced every variety of infectious diseases, and rather prided herself on having an immunity against such diseases. Some years later,

however, she got a little out of sorts, and she contracted typhus fever, and died. That meant that the patient must be in a particular condition of body for the poison to strike home. The same reasoning applied in the case of doctors in general practice. He himself had seen 150 cases of scarlet fever in a month without ever having contracted the disease. Their duty as physicians was to get their patients back to normal health as promptly as possible ; hence the advantage of sea air, country air, and the like. It was quite a different matter when it came to giving the patient something to kill the bacilli. They might give the patient mercury, and they might kill the bacilli. That was possible, but in so doing they would be going a long way towards killing the patient himself. Strengthen his tissues, and they would throw off the morbid influences for themselves. That was the alpha and the omega of treatment.

Dr. STOKER agreed in the analogy of the dog and the wolf, but he pointed out that though closely allied, dogs did not breed wolves, and *vice versa*. The only proof by which the theory was upheld was that the tubercle bacillus was a poison, which they injected into the healthy body of the lower animals, thus producing a disease. Then, again, a cure was arrived at by the fact that, when the second injection took place, under the same circumstances, a cure resulted. Of course there was nobody who could challenge the statements which that gentleman made. No one doubted that their immunity from contagion was due to the actual condition of their tissues at the moment of exposure. That was exactly the theory that was held by Koch. He said, if you find a soil upon which these bacilli can grow and flourish, there you can set up tuberculosis, while in a healthy body no effect followed. He mentioned a case of pulmonary phthisis in a patient who had not been steady in his youth, and who developed the undoubted symptoms of the disease at the age of thirty-eight, bacilli being present in the sputum in any quantity. He had now been three months under Koch's treatment, and the improvement was in every way satisfactory. During the first two weeks his weight had increased 6lbs., the moist sounds had disappeared, the evening temperature had diminished, together with marked amelioration in the character and the quantity of the sputum. He thought it was only right to record their actual experience. He had nothing but horror for those who used such a remedy in advanced cases, but it was quite otherwise in such a case as he had narrated. The study of bacteriology was a large subject. He referred to the investigations of Mosetig, of Vienna, who had observed that when cancer cells were stained with aniline the nuclei were destroyed. He had, therefore, injected interstitially a 1·500 solution of picrotoxin. One of his colleagues had tried this in a case of epithelioma of the face, and so far the results had been most surprising and most gratifying. The growth was gradually disappearing.

Dr. MACINTYRE, in reply, thanked the Fellows for their kindly appreciation of his work, which he admitted had taken up a great deal of his time. In reference to his remarks as to the epiblastic and hypoblastic structures he said they only amounted to this, that owing to anatomical differences of structure, certain tissues might not be so liable as others to take on particular forms of growth. He simply meant to

convey that it was comparatively rare to find tubercle in the nose and mouth, and it was admitted that tubercle was much more common below the epiglottis than above it. With reference to local applications, he recalled a discussion at the meeting of the British Medical Association, at Glasgow, at which a gentleman had said that after many years' study he had come to the conclusion that diphtheria was a local disease manufactured near the tonsil, and so much impressed was he with this view that he had decided the very next case he came across to stick a red-hot poker in the mouth and rub the tonsils. If they believed that diphtheria would be cured by removal of the parts, then this was a very efficient form of applying the actual cautery. With regard to the question of the identity of lupus and tubercle, he agreed with Dr. Campbell. As the result of long clinical experience, he was convinced that there was a difference between the diseases. They occasionally got tubercular ulceration of the tongue, but it did not resemble in the slightest the lupoid ulceration. He had under his observation a man with a tubercular cavity in the lungs, who, some time ago, bit his tongue, and that proved the starting-point of a tubercular ulceration. It had a hard irregular surface, and gave one the impression of tubercle of the lung. It was distinctly different from lupus. It was painless, at least the patient did not complain of pain, but the man's general condition was so bad that he had not thought it worth while to pay any attention to it. He admitted the difficulty of finding the bacillus in lupus, but lupus had not entered for a great share of his work at all. A dispensary was not the place to get hold of such cases, because they went to a skin hospital. He was not, therefore, prepared to give the same opinion as Dr. Campbell, but so far he agreed with him. Recognising the lack of specimens of lupus-bacillus in his collection, he had applied to a gentleman at Berlin to send him some, because he wanted some fresh material, but he had been informed that none could be had, because all the cases had been cured by Koch's treatment. He was convinced that there had been too much trying of late to find some remedy to apply in particular to tuberculosis, leading to general measures being neglected. He mentioned the case of a gentleman who had been recommended to go to the Cape, but had delayed his departure because of the florid accounts that came from Berlin. He had given up the idea of trying Koch's treatment now, but his chances of recovery had been forfeited by the delay. The attempt to bring something forward which should kill this bacillus, either directly or indirectly, had almost pushed the ordinary remedies aside. It could not be impressed too much upon them that there had only been thirteen cases of alleged cure out of 1200 in which it had been tried. Personally, he would rather take a voyage than trust to this treatment.

Mr. W. Wyatt Wingrave read the following note on *Microscopic Specimens with Lungs and Larynx from a Patient treated by Koch's Remedy*, being the report of the *post-mortem* appearances in a case of laryngeal tuberculosis treated by tuberculin. (Mr. Lennox Browne's case No. 8, in his essay on Koch's remedy.)

LUNGS.—*Right.* The pleural surfaces were slightly adherent at the apex. The upper lobe was studded with caseous tubercles, which here and there were actively breaking down. The remaining lobes were free from tubercles, but showed marked congestion and œdema.

Left. Pleura everywhere so adherent that the lungs were much torn in removal. Both lobes were in an advanced stage of destruction, being riddled with suppurating chambers containing grumous non-fœtid pus. There were three large cavities, two in the upper lobe, and one situated in the base of the lower lobe posteriorly; but practically no part of the lung was free from necrosis.

The LARYNX presented the usual features of tubercular ulceration mainly involving the right vocal cords and ventricular bands, with marked thickening of both ary-epiglottic folds. The right arytenoid cartilage and its cornicula were bare, and the ulceration had also invaded the left sub-glottic region. Excepting the left kidney, in which was discovered a small abscess, the remaining viscera were entirely free from tubercle. Microscopic examination proved the tuberculous nature of the morbid processes.

REMARKS.—Perhaps some apology would be deemed necessary for presenting such an ordinary specimen to the Society, were it not attended by circumstances of more than ordinary interest. It is only fair to the remedy and its discoverer that all available evidence (especially that of the cadaver) should be openly and impartially investigated, and the rarity of such an opportunity in England may be taken as a sufficient justification for the exhibition of the specimens.

The patient, on admission, presented some decided, though distinctly localized pulmonary disease, of three years' duration, and apparently quiescent; also unmistakeable laryngeal tuberculosis of less than twelve months' duration. His temperature was carefully watched for eighteen days, and it maintained a mean level of 99° F. After the first injection, pyrexia rapidly developed and increased, the lung symptoms were as it were "lit up," and his general condition became so grave that the treatment was stopped after the fourth injection of ·006 grammes. Still he grew rapidly worse, and fifty days after the last injection, necropsy reveals an extent of disease contrasting strongly with the conditions which the physical signs on his admission indicated.

It is interesting to note that the disease was distinctly limited to the viscera which were primarily attacked (with the exception of the one kidney), so that notwithstanding the violent pulmonary "eruption," tuberculous processes were not established elsewhere, although there was ample time for such. Was the pulmonary tuberculosis secondary to the laryngeal? is a question which naturally suggests itself. It is quite possible that the early pulmonary lesion was non-tubercular. The freedom of the other viscera from tubercle is in favour of such a view. It must not be overlooked also that the patient had for many years been addicted to spirit drinking.

Still, whatever interpretation this evidence may suggest or justify, it must be admitted that the facts are deficient neither in interest nor significance.

Mr. LENNOX BROWNE read a paper on *Cases illustrating the effect of Tuberculin (Koch's Remedy) and of Cantharidinate of Potash (Liebreich's Remedy) on Cases of Lupus and Tuberculosis*. The cases of some of the patients brought here this evening have been already reported up to a certain date in my recent publication on "Koch's Remedy in relation specially to Throat Consumption."

Case I. is that of A. F. (No. 6 in the book), who is suffering from lupus of the face, especially of the nose and larynx. Treatment was commenced on December 14th, 1890, and from that date up to the present the patient has had eleven injections, commencing with two milligrammes and extending to two centigrammes. It cannot be said that the lupus of the nose is cured, but there is diminished reaction at each fresh injection, which may indicate that there is less lupus tissue to be attacked, or, as some would have it, that the system has become habituated to the poison. The condition of the larynx has, however, exhibited a great though gradual change for the better, a change which is not comparable with any treatment I have hitherto seen pursued with that exceedingly torpid disease.

Beyond these evidences of the remedy on visible lupus tissue, the influence of the injections on old scars has been most interesting. On the day following the second injection, it was noticed that three red patches had appeared, one at each angle of the jaw, where there were sores two years ago, which had healed spontaneously, and a third under the chin ; this patch was the largest, and was much swollen. It represented the site of a gland which had suppurated two years previously, and which had apparently been quite healed. The changes in appearance of the scar formerly treated by Dr. Campbell were also interesting, and afforded very satisfactory evidence of the success of his treatment. The colour was much intensified, and less glazed ; at the extreme margin of the upper and outer angle, as well as at the lower and inner, there was very slight desquamation, but there was no breaking out whatever of the main surface of the cicatrized area. The eyelids were red and swollen. The scar on the hand was unaffected.

Another interesting feature was the fact that on two or three occasions he had anuria, in some instances lasting for a few hours. The general health has been unaffected injuriously in other respects, and the body weight represents a gain of five pounds in the three months he has been under treatment.

Case II. is that of H. W. (No. 7 in my book), affected with lupus of the nose, fauces, and larynx. He has been under treatment since December 14th, 1890, and has had nine injections, which commencing with three milligrammes have been increased up to a centigramme.

In this case, no more than in the former, can there be said to be cure ; and it is especially noticeable that the small patch of lupus—by no means a deep one, or actively ulcerated—at the angle of the lip reacts with each fresh injection. Another point of interest is the appearance of active nodules on the stellate scar at the back of the pharynx, which occurred on reaction of an early injection.

A further point is the very patent effect of the remedy on the general

system, the temperature having risen on one occasion to 104·8° F., accompanied with general disturbance, even to the extent of delirium. There has, however, been no permanently ill effect on the general health, as is evidenced by the fact that the boy now weighs 6½ lbs. heavier than he did when first admitted for treatment.

Case III. is that of Elizabeth H., aged fifty-one (No. 26 in my monograph). In this case a doubtful diagnosis of lupus of the ear was confirmed by injections of tuberculin. She was admitted for treatment on December 13th, 1890, and she has had thirteen injections with very little effect on the general health. The first injection was five milligrammes, and the last one seven centigrammes. The temperature never rose beyond 101·5° F., and on the occasion of the last injection it was less than 101° F. It will be noticed by measurements that the affected ear, which was formerly a quarter of an inch larger than the other, is now reduced to equal dimensions, and the reduction in the thickening is proportionately decreased. There is also improvement in contour, and an easy recognition on inspection of the various fossæ and prominences of the auricle, which were previously quite merged in the infiltration.

The next three cases have come under my treatment only within the last few weeks, and are not therefore alluded to in my essay.

Case IV. : James P., aged forty, residing at Bournemouth, was sent up to me by Dr. Gardiner of that town, and admitted into the hospital on March 4th, 1891. The patient had complained of a sore throat for twelve months, which gradually increased in intensity until last June, when he first sought medical advice. The voice became worse in November last. Odynphagia came on a month ago, the pain shooting up to the left ear. Had lost weight, and been troubled with night sweats. *Sputum* frothy and scanty, but without tubercle bacilli. No hæmoptysis, except a small quantity after a severe attack of coughing. One of the patient's sisters died of phthisis, and another sister is very delicate in the chest.

Laryngoscopic examination showed considerable hyperæmia of the left vocal cord, with a distinct "notch" made by ulceration just anterior to the position of the vocal process.

Examination of the chest revealed slight dulness at both apices, especially the left, where both vocal resonance were increased, attended by some moist *râles* and prolonged expiration. The heart's action was very feeble, but no murmur could be detected.

On March 5th I commenced with an injection of one milligramme of tuberculin. This was repeated on March 7th with three milligrammes, and on March 11th with five milligrammes, the temperature after this last injection reaching 102° F.

On March 13th I substituted Liebreich's solution for the tuberculin, which I have continued to inject daily to the number of seven. On the first three days I injected two decimilligrammes, and the last four days have increased it to three decimilligrammes. The temperature under this last remedy has not been increased at any period, but, on the other hand, it is not less than when he entered the hospital. A swollen gland at the angle of the right jaw became softer and smaller, and the pain

on swallowing almost entirely disappeared under the influence of the tuberculin. There has been neither improvement nor retrogression under the influence of the substituted remedy, except that his night sweats are diminished, and there has been hardly any perspiration of reaction. Locally, the ulcer in the larynx gives evidence of healing by granulation.

Slight dysuria, with urethral tenesmus, has been experienced, but there has been no trace of albumen.

P.S.—April 21st : Examination to-day shows that the affected cord is quite healed, but somewhat congested. He has had three injections of tuberculin, and thirty-five of Liebreich's remedy. The temperature is almost normal, and the body weight is five pounds in excess of that registered on admission. He leaves to-day for Bournemouth.

Case VI. : W. S., aged twenty-nine, unmarried ; iron worker. Family history : Father drowned ; mother living and healthy ; two brothers and sisters living and healthy ; one sister dead—cause unknown.

Personal history : Had a weak constitution for many years ; no rheumatism or syphilis ; been a moderate drinker, and much exposed to weather ; was an in-patient in April, 1888, for "bad throat and loss of voice." The opinion then was evidently divided between lupus and tubercle of larynx and pharynx. There was some slightly impaired resonance and tubular breathing at both apices ; heart was normal ; nose unaffected ; had not lost any weight lately, and did not sweat excessively.

Present illness : Six years ago complained of a "lump in throat," which interfered with swallowing and breathing, and for which he became an in-patient. He left the hospital feeling much better and has remained so. His nose commenced to trouble him in December, 1889, with a "running and mattery" discharge, which at times dried up and blocked the passage ; this has gradually increased. The redness commenced twelve months afterwards as a red pimple on the right side, gradually spreading and meeting a similar patch on the left side, which appeared at a later date. It has always been painful ; voice has always been husky ; of late has been troubled with a slight cough, and a general feeling of "poorliness." Feet swelled and breath became very short about twelve months ago, but those symptoms have gone.

Present state : Has a marked redness and thickening over bridge of nose, the surface of which is quite smooth and unbroken. The swelling is slightly tender and sometimes painful. *Nose :* The choanæ are almost blocked by reddish granular-looking material, with abundance of crusts. There is a sickly-smelling, purulent discharge, but not fœtid. *Throat :* Faucial pillars congested. Posterior pharyngeal wall glazed, florid, studded with coral pink nodules, and scored with cicatrices. *Larynx :* Epiglottis eroded, distorted and thickened, hiding the glottis, but the cords can be seen when in position of extreme adduction, which movement is perfect. *Lungs :* No marked change except at the left apex, where respiratory sounds are accentuated, and vocal resonance is increased. There is no marked dulness on percussion, but distinct resistance. The expansion on the left side is less than on the right. *Heart :* Marked hypertrophy ; apex impulse in fifth outer space immediately below left nipple. There is

a double systolic murmur at apex, which is, however, heard all over the thorax. A well-marked systolic thrill is felt over the apex. (Mitral disease.) *Urine:* Normal and plentiful. *Cough:* Short, hacking and irritable. No expectoration.

Was injected twice with tuberculin. March 11th, received 0·002 gramme. Marce 17th, received 0·003 gramme. He reacted well, and his nasal breathing was considerably improved ; but cough was undoubtedly increased, and the pulmonary signs appearing to be evidently extending, it was decided to forego the tuberculin in favour of potassium cantharidinate after a rest.

His heart symptoms were also increased, there being some *anasarca* of the feet, and a very loud murmur being heard over both sides of chest. These, however, soon diminished under digitalis and rest in bed.

P.S.—April 21st : This patient was unable to endure even the minimum dose of Leibreich's remedy on account of dysuria and vesical tenesmus. The tuberculin injections have therefore been resumed cautiously, and so far with good local effect and no untoward constitutional result.

Case VII. : Sophia R., aged nineteen. Admitted January 18th, 1890, complaining of pain in the throat, with cough.

Family history :Father died of paralysis ; mother living and healthy ; four brothers and sisters living—all suffer with "weak chest."

Personal history : Has always been "weakly," and suffered with winter cough. During the last few months has lost flesh considerably, and been subject to sweating. The cough has of late very much increased, proportionally with pain and difficulty in swallowing. Menstruation regular but profuse.

State on admission : Complains of severe pain in her throat, which runs up to both ears, with great pain and difficulty in swallowing fluids and solids. There is a troublesome hacking cough ; worse at night-time. Has a well-marked hectic flush, and is somewhat anæmic ; is very depressed in spirits, and suffers greatly with dyspnœa on exertion. The voice is very weak and husky, and polyphonic. Expectoration is scanty, muco-purulent, and occasionally bloody, but there has been no hæmoptysis. Bacilli are not found. Temperature, 2 p.m., 101° ; pulse, 88 ; respiration, 20. *Lungs:* There is slight dulness at both apices. No moist sounds. Vocal resonance and vocal vibrations distinctly increased, with some harsh respiration. Expiration is distinctly audible. The remainder of lungs is free from disease. Expansion on both sides deficient. *Larynx*: Epiglottis thickened and clubbed ; arytenoids thickened and congested, also posterior commissure and ventricular bands, to the extent of almost hiding the vocal cords, which are somewhat pink. *Heart:* Action irregular and rapid ; sounds accentuated ; no murmur ; slight dilatation.

Progress : Was injected for the first time, on January 29th, ·001 gramme of tuberculin, followed by five other injections : gradually increased to ·004 gramme. Deglutition was quickly relieved and ceased to cause any pain on February 11th, although dysphagia still remained in a less degree. The voice became quite clear after the second or third injection. The expectoration was very much increased, showing elastic

tissue and bacilli. There was some slight hæmoptysis, and several attacks of severe epistaxis. The laryngeal changes were marked. At first the general swelling was increased. On February 5th three necrotic patches appeared on epiglottis and arytenoids, which subsequently ulcerated, and then thickening, diminished. On February 8th the physical signs showed marked changes in both lungs, indicative of consolidation, which have not diminished, but, on the other hand, show a gradual but marked increase. On March 13th cantharidinate of potash, ·0002 gramme, was injected, but caused such intense vesical pain that it had soon to be discontinued, and the patient was discharged with some symptomatic improvement.

With the cases shown this evening, I have had under my own care fourteen cases, of which eight have been instances of true tuberculosis affecting both larynx and lungs, five of lupus, and one of tuberculous glands.

I regret to say that up to the present I have not seen any of those visible and marked evidences of improvement in the larynx such as I witnessed at Berlin under the care of Professors Gerhardt and Krause, but symptomatic relief has been almost always constant, and in some cases quite remarkable in the rapidity of its occurrence, in its extent, and in its permanency, even where physical changes have been unfavourable. In one case under my care (H. H., No. 8 in my book) the treatment at the beginning was most promising, for *odynphagia*, which had been extreme, was relieved within thirty-six hours of the first injection, and the patient was able to take food for eight or ten days, when *dysphagia* occurred, necessitating a liquid dietary, but there was never any further pain in deglutition until the time of his death, which occurred fifty days after the last injection

The condition of the lungs in this case, as diagnosed by auscultation on admission, did not prepare us to expect what we saw at the *post-mortem* examination, the report of which, as well as the specimens, are given by Mr. Wingrave. I am bound to say that these appearances are curiously like what I saw as the result of another autopsy in a case under the care of Professor Krause, and similar to the conditions so carefully described by Virchow.

In two other cases of laryngeal phthisis there was also symptomatic relief, but treatment was discontinued, as the effect on the general health was discouraging. In the two cases mentioned this evening I have substituted Liebreich's remedy for the same reason, viz., that hectic had increased in intensity, and become more constant.

But in one case—that of a gentleman (case 31 in my book), taken to Berlin, and placed under the care of Professor Gerhardt—I think we may claim that there is distinct cure, for Professor Gerhardt certifies that very slight dulness remains at the seat of former mischief, and that there is vesicular breathing where disease was previously diagnosed both by himself, Dr. Dawson Williams, and Dr. Von Noorden.

I am happy to add that my experience of the diagnostic value of tuberculin has been most satisfactory. My knowledge of the action of Liebreich's remedy is at present too slight to warrant my expressing any definite opinion on the subject. Except in the one case of H. P. (No. IV.

in this series), the injections even of minimum doses have had to be discontinued on account of the intense vesical tenesmus occasioned. In several albumen has been manifested.

Dr. GEORGE STOKER read a paper on *A Case of Malignant Tumour of the Larynx treated by Intra-Laryngeal Operation.*

THE case that I have the honour to bring before the notice of the Association is that of a gentleman, aged sixty-seven. He spent many years in India, and when there enjoyed excellent health. There is no history of any of his relations having suffered from malignant disease. His present—or, I trust, his past—trouble dates from five years ago. After an attack of whooping cough he lost his voice ; on two different occasions he sought advice in reference to this hoarseness, and, curious to relate, two days after each consultation he had a fit of coughing, when his voice suddenly and almost entirely returned. The relief was only temporary, and when I saw him in May last he was nearly aphonic. His general health was excellent ; he had no pain or dyspnœa, and he was not losing flesh. There was no external swelling or enlargement of glands. He had some cough, usually in the morning, which was, I believe, due to chronic bronchial irritation ; its existence dated from long before the hoarseness began.

On examination I found the pharynx deeply congested and relaxed, and the uvula swollen and elongated. There was general congestion of the larynx, and a greyish-coloured, glistening, pear-shaped tumour was seen, springing from the anterior part of the upper surface of the left vocal cord, and extending as far back as the arytenoid cartilage on the same side. The tumour was pedunculated, and its attachment occupied about the anterior fourth of the cord.

The left vocal cord was very red and thickened, and the right cord was also congested. On phonation the tumour became apparently tightly distended, and projected across the glottis, which accounted for the hoarseness, but during respiration it lay quietly on the vocal cord, which, I presume, accounted for the absence of dyspnœa. The vocal cords moved normally, and there was no ulceration, and no blood or matter was visible.

I believed the growth to be either cystic or adenomatous, but the age of the patient, the persistent nature of the congestion, and the extreme irritability of the larynx, &c., aroused some suspicion in my mind as to the possibility of its being of a malignant nature. There was extreme irritability of both pharynx and larynx, and even after applying a thirty per cent. solution of cocaine it was difficult to explore the larynx. On this account a great many sittings were necessary to train the larynx. A portion of the growth was removed with the galvano-snare, and submitted to Mr. Shattock for examination. The following is his report : " I have " carefully examined the sections of the laryngeal tumour, and must pro- " nounce it to be a horny carcinoma." The sections were also examined by Mr. Stewart, and he said, " The growth seems to be epitheliomatous, " although not of the usual character."

The question at once arose as to what the future treatment should be.

Mr. Butlin saw the patient in consultation, and it was decided that no external operation was advisable, for the following reasons :—

1. The age of the patient.
2. The nature of the growth.
3. The unfavourable results of external operations on the larynx ; and "last, but not least," the patient utterly declined to consent to any external operation.

The tumour was removed in several pieces with the galvano-snare, and the portions submitted for microscopic examination, and on each occasion the appearances were the same as those seen in the first portion examined. The free part of the tumour having been entirely removed, the pedicle and site of attachment were freely cauterized with galvano-cautery ; this naturally caused considerable inflammation and swelling, but when these conditions subsided no discomfort remained, and the voice became quite normal.

I saw the patient on October 8th, 1890, and the following are the notes made in reference to my examination : "Voice completely restored, "indurated base has contracted, left vocal cord is still congested, right "vocal cord fairly normal, and general surface of laryngeal mucous "membrane is healthy, general health is excellent, and weight main-"tained." In answer to an enquiry made on March 10th, 1891, as to the progress of the case I received the following reply : "As you wish to "know what progress I am making, I am happy to say that my answer "must be 'none.' I seem to have no knowledge of ever having had a "throat, or an obstruction of the vocal cords."

I saw the patient on March 14th, 1891 ; I found the left cord deeply congested, and somewhat thickened ; the right cord was quite normal. There was no sign of any recurrence of the growth ; the voice was clear and natural. So far, the results are most gratifying, but one can hardly believe that there will not be a recurrence of the growth. It is now nine months since the operation was performed, and should the growth recur I trust by the use of the galvano-cautery to keep it in check, and prolong the patient's life in comfort.

I venture to draw attention to the following points :—

1. As to diagnosis.
   (*a*) The age of the patient.
   (*b*) The persistent character of the congestion.
   (*c*) The microscopic examination. It may be sometimes negative, but can never be regarded as being decisive ; as positive evidence it is conclusive.
2. With regard to treatment.
   (*a*) Considering the age and health of the patient, and the advisability in such cases of intra-laryngeal operations.
   (*b*) The necessity of prolonged and careful training, in order to insure accuracy and certainty, and to avoid injuring the larynx or removing inoffending structures.
3. The method of operation.
   (*a*) The advantages of cocaine and the necessity of using a sufficiently strong solution.

(*b*) The advantages of the galvano-cautery or snare over the forceps, &c.

A. Is much less bulky, and does not obstruct the view.
B. Is a gentle method, and renders force quite unnecessary.
C. Accompanied by less bleeding.
D. Destroys roots and growth.
E. Is easily bent according to the situation of the growth.

In conclusion, I venture to express the extreme gratification I feel at the progress and prospects of this case. In doing so I "lay no flattering unction to my soul." I know there are many who could have accomplished what I did, better, and in a shorter time; I only deem myself most fortunate in having the opportunity. I am certain that no operator was ever more favoured than I was in reference to the patient with whom he had to deal, and it is but just to say that I attribute much of the success that attended my efforts to his courage, determination, and endurance.

Mr. LENNOX BROWNE said that Dr. Stoker had omitted to state that he (Mr. Browne) had advised immediate operation. They could quite understand how, on account of certain personal characteristics, Dr. Stoker had succeeded in persuading the patient where neither Teuton nor Englishman had been able to overcome the reluctance of the patient. He had himself impressed the patient with the necessity for immediate operation, but his wife was at that time totally opposed to it. The patient at his first visit showed a drawing which had been made of the laryngeal appearances by the gentleman who had twice previously seen the case. This gentleman had told the patient that it might be a fibroma (there was only a small projection on one vocal cord) or that it might develop into a cystic growth. That was in 1886, and the patient was then sixty-two years of age. He himself did not see the patient until 1888. At that time there was little doubt from its appearance as to its being cystic. He believed he had seen him again in 1889, when there was not much change; but the third time the progress was marked, and he had again strongly urged the necessity for an operation. While he congratulated Dr. Stoker upon his success, he pointed out that there was no sign of any enlarged gland, no emaciation, no laryngeal spasm or shortness of breath, and that therefore all clinical evidence was in favour of a benign growth. He reminded Dr. Stoker that he had reported in his work the case of a man under Fraenkel, of Berlin, who had been treated for an undoubtedly malignant growth on one vocal cord, and successfully, by means of the galvano-cautery; and this (Dr. Stoker's case) was the second case. He was delighted to hear Dr Stoker speak as he did of the use of the forceps; for in his own experience of nearly twenty-six years, he had never introduced a pair of forceps into the larynx, although he had from nine to twelve cases of laryngeal growth a year, and he thought one could get on very well without them. With regard to cocaine, he could only add that in many patients it proved more of an irritant than an anæsthetic, and he mentioned a case in which the first operation having been carried through under cocaine, the patient, on a second occasion, said he suffered less without it.

Dr. DONALD STEWART recalled a case brought before the Medical Society of Vienna by Schnitzler of a growth recognized to be carcinomatous by several independent pathologists. That was many years ago, and the patient lived for many years after. That probably was a case of the same category. He had had only two cases of intra-laryngeal growth, which he had attempted to remove by the forceps, and he was fain to confess that he had failed to achieve his object, only securing pieces thereof. These cases were still under his observation, the patients being fairly comfortable, but the growths not entirely removed. He was very pleased to hear of the advantages attaching to the use of the galvano wire.

Dr. CAMPBELL corroborated what Mr. Browne had said about cocaine acting as an irritant. That very day he had injected some of a 20 grain to the ounce solution for the removal of some cysts of the scalp, and he never remembered so much pain being complained of.

Dr. STOKER pointed out that such a solution was not likely to procure any relief from pain ; nothing under a 20 per cent. strength was likely to be of service.

The meeting then adjourned.

MEETING HELD ON JUNE 19th, 1891.

Dr. DUNDAS GRANT, *Vice-President for England*, IN THE CHAIR.

Dr. SANDFORD, in the absence of the Hon. Sec., having read the minutes of the previous meeting, and these having been declared to be correct, a letter was read from Dr. Macintyre expressing his regret at not being able to be present.

The following gentlemen were unanimously elected Fellows of the Association :—FREDERICK AUGUSTUS SMITH, M.D., Portland House, Cheltenham ; ARTHUR G. ROOT, M.D., Albany Medical College, Albany, N.Y., U.S.A. ; JOHN WILLIAM REES, M.R.C.S., L.R.C.P., Throat Hospital, Golden Square, London, W.

ALTERATION OF RULE.

In the absence of Dr. GEORGE STOKER, Mr. LENNOX BROWNE brought forward the following proposed alteration in and addition to the present rule, viz. :—

> "That papers and communications announced on the official programmes of the Association shall not be separately published until they have first appeared in the official journal of the Association. This rule shall not affect or prevent a *résumé* or report of the proceedings appearing at any time in any journal that may send a reporter to the meeting."

He observed that they had received a very liberal offer for the publication of their transactions, and their publication could not fail to excite greater interest on the part of Fellows since it could be the means of disseminating a knowledge of the work that was being done, not only to

those Fellows who could not always be present, but generally would thus tend to and advance the interests of the Association. He urged, therefore, that it would be only proper for them to exercise that small amount of self-denial which would be involved by refraining from publishing papers read at their meetings in any other journal until they had first appeared in the JOURNAL OF LARYNGOLOGY, which was now recognised as their Official Journal. He thought that such a course would commend itself to them as being loyal to their publisher. The resolution was seconded by Dr. BARCLAY BARON.

The PRESIDENT, in reply to questions, further explained the object of the motion, and added that it was understood that the JOURNAL OF LARYNGOLOGY would publish a report of the proceedings as early as possible. It was, after all, only a question of reciprocity as between the Association and their publisher.

The proposal was then agreed to unanimously.

Mr. LENNOX BROWNE then moved to alter Rule 18 as to the formation of a quorum, so that three members of Council would suffice instead of four. He explained that there being so few metropolitan members it was sometimes difficult to get together the requisite number of members to carry on the business.

This motion was also agreed to.

It was proposed by Mr. LENNOX BROWNE, and carried unanimously,

> "That Messrs. Coutts and Co., 59, Strand, London, W.C., be authorized to honour the signature of the hon. sec. of the Association for the time being—the hon. sec. at present being Dr. George Stoker. That Messrs. Coutts and Co. shall be advised of any change in the secretaryship of the Association, and are empowered to charge a commission of one guinea per annum, commencing in June, 1892."

The SECRETARY then read various correspondence.

Mr. LENNOX BROWNE suggested that the ballot should not be declared until the end of the meeting. He regretted that the name of the President did not figure on the programme, and also that the fact that the President's address was to be delivered had not been made more conspicuous.

The meeting agreed to declare the result of the election as the last item of business on the programme.

At this juncture, Dr. Hunter Mackenzie, the President, having arrived, took his seat in the Presidential chair. He apologized for the delay in his arrival, but explained that he had been present in good time in the afternoon, but though he had waited some time, only three provincial members had put in an appearance, and he had been compelled to adjourn the meeting in consequence. He observed that he thought the London Fellows were singularly wanting in courtesy in not having attended.

Mr. LENNOX BROWNE pointed out that it was sometimes more difficult for them to be punctual for the very reason that they were London Fellows. He suggested that probably many members like himself had

expected the meeting to take place at three o'clock as heretofore, not having remarked the change in the hour. To overcome the difficulty of officers being elected who might be supposed to at once resume their duties, he moved that the report of the scrutineers as to the result of the ballot be made the last item on the business of the meeting.

Mr. J. M. REES then read the notes of the following three cases (for Dr. Norris Wolfenden), the patients being shown in an adjoining room:—

CASE I.—*A Mixed Case of Syphilis and Tubercle.*—J. W., female, teacher in good circumstances, aged thirty-six, with atresia of the naso-pharynx and superficial ulceration of the soft palate, swollen and ulcerated epiglottis, and distorted glottis. Throat symptoms commenced with slight pain and ulceration of soft palate nine years ago. Four years ago she first came to the Throat Hospital presenting a membranous web between the vocal cords and aphonia, but no ulceration. The posterior fauces alone were then adherent to the pharynx. The web was destroyed by the galvano-cautery, and voice restored. The patient was not seen again for three years, during which time she had had several severe attacks of ulceration. There was at the time of her first visit to the hospital no sign of phthisis, and no history of syphilis could be obtained. Now, the palate was adherent to the posterior wall of the pharynx, so that the naso-pharynx is almost entirely cut off from the oro-pharynx, save for a perforation the size of a pea, situated a little to the left of the uvula. Her condition when she came to the Throat Hospital, Golden Square, on Oct. 10, 1890, was: Atresia of the naso-pharynx as described, but with a superficial, irregular, ill-defined ulceration of the soft palate, the area of which would be equal to that of a florin, and covered with grey granulations and mucous secretion, and at times with a thin grey filmy membrane, which scraped off easily, leaving a bleeding and rather nodular surface underneath; an uniformly enlarged epiglottis with a similar ulceration along its apex; no enlargement of arytenoids or ary-epiglottic folds, but a very curious state of the glottis. The right vocal cord had been destroyed, and, as a substitute, the right ventricular band had become stretched and altered to simulate a vocal cord, being anteriorly in the exact position of the anterior portion of the vocal cord, but as it proceeded backwards it became wider, and curved, so that it attached itself to the right side of the left arytenoid, but somewhat above the level of the left vocal cord. This altered ventricular band became so pale, glistening and fibrous-like, that at first sight it might easily be mistaken for a mis-shapen cord. The voice was excellent and clear, though not strong. At this time there was no rise of temperature, no expectoration, or spitting of blood, no enlarged glands under the jaw, but a certain amount of discomfort in swallowing, and at times odynphagia. The ulceration has been most intractable, not responding in the least degree to any form of treatment—iodoform, iodide of potassium, or iodide of iron.

Daily curetting, scarifications and the application of lactic acid have produced no apparent beneficial change. Patient in March became an

in-patient for three weeks, and all local applications energetically applied failed. Bacilli were found in specimens scraped from the palate and epiglottis. No nightly rise of temperature was observed.

June 14.—For the first time patient coughed up about an egg-cupful of blood. Coughs a good deal of a morning lately. Fresh-formed ulceration is to be seen, with but little accompanying swelling, on the right ary-epiglottic fold. Crepitations now are to be heard at the left apex, with slight tubular breathing and bronchophony ; very limited. Her history of syphilis was vague, but the state of the palate, epiglottis, and distortion of the glottis, made matters plain. The ulcerations on the epiglottis on its laryngeal surface were typical of tubercle, and bacilli were found in specimens scraped from the surface. It is curious that her discomfort and pain in swallowing was not greater ; but pain she only complained of after the parts had been subjected to irritation. Possibly the combination of the two diseases might be credited for this alleviation.

CASE II.—*Case of Multiple Papilloma in a Child.* The child, aged ten and a half, has been under treatment since November, 1890, for this condition, the growths springing from the surfaces and edges of both vocal cords, and the anterior surface of the arytenoids and the ventricular bands, and a large mass of growth springing from the inter-arytenoid commissure. Three warts have lately appeared on the right hand. The history of the child's condition reveals that she has never had a voice. There are no signs of congenital syphilis, the child being robust in appearance. There are no post-nasal growths present. She has on two occasions been to large general hospitals without the condition being recognised. The growths have been removed by operation with the ordinary Mackenzie forceps on several occasions by Mr. Rees. Though the larynx has been once quite clear of growth, and the voice restored, the growths have recurred, so as to almost defy treatment. There has never been any dyspnœa. All kinds of local medication (lactic acid, iron, zinc, &c.) have been tried without result. The growths are probably congenital in origin. The coincidence of warts on the hand with laryngeal growths is interesting as showing the predisposition to papillomatous growths in more than one situation in the body. A case of this kind had previously been mentioned to the Society as occurring in Dr. Wolfenden's practice, where an aural polypus, papilloma of the uvula and laryngeal papilloma, existed simultaneously in an adult man.

CASE III.—*Complete Atresia of Naso-Pharynx.* The patient was a married woman, aged thirty-nine, and though a very indistinct history of syphilis (such as loss of hair and some throat trouble) could be obtained, here was no doubt as to the nature of the condition. The whole of the soft palate and the uvula throughout its whole length were completely attached to the pharynx, leaving no aperture of communication from the pharynx into the naso-pharynx. This fleshy curtain was of a fair degree of thickness. She had been under treatment for three years when she came with atresia (complete) of the naso-pharynx, and which had supervened six years after the first onset of ulceration in the pharynx. During these three years there had been several severe attacks of ulceration of the

posterior wall of the pharynx, which had yielded to large doses of iodide of potash and cauterization.

Dr. SANDFORD read the notes of the following case :—*Foreign Body lodged at Base of the Tongue for several Years.*

J. L., aged forty-seven, consulted me in December last. He complained of increasing difficulty of articulation, some difficulty in swallowing, and of a swelling in the right submaxillary region. He suffered extreme pain from time to time when the swelling, he said, appeared to become inflamed, and he then obtained considerable relief from local applications, such as poultices, etc., under medical advice. Of late the trouble had become unbearable, and the patient had lost considerably in weight and general health. Externally the right submaxillary gland was swollen, and extremely hard, red, and glazed.

On examining the interior of the mouth, I noticed the tongue to move with great difficulty at the right side, and, on raising it, a thickened, ulcerated patch appeared at its base on a level with the position of the last tooth. Most of the teeth were absent. The ulcerated surface was soft to touch, but bled profusely. The whole presented an extremely malignant appearance. On searching with the finger I felt some unusually hard substance at the base of the ulcer, and with some difficulty I extracted by means of a forceps a white, chalky body, which afterwards proved to be a tooth covered over with deposit, which had evidently been *in situ* for a long time, and had burrowed its way downwards between the jaw and the tongue. On enquiry, the patient informed me that he recollected having been on a severe drinking bout several years previously, shortly before his throat trouble commenced, and to have had some "disputes" with a comrade, during which the tooth, he thinks, might have been dislodged from its socket, and found a resting-place beneath the tongue. As to the nature of the ulcer and swelling, I give a guarded diagnosis, but every abnormal condition gradually disappeared under treatment after the removal of the cause of irritation, and in a month the patient was quite well.

Sir MORELL MACKENZIE related that he had once removed a foreign body from the throat which had been *in situ* for fourteen years. The foreign body in question was a pin originally about two inches long, but the piece removed was only about half an inch long, the other portion having corroded away, and the part that was left being curiously thickened in an irregular way by the action of the tissues on the metal. The patient was a lady who lived at the Cape of Good Hope. There had been many attempts made to remove the pin, all of which had been unsuccessful. It was in the right hyoid fossa, only the extremity being visible. The pin had been pushed almost vertically downwards along the side of the larynx, and only the small black point presented. He managed to get hold of and removed it, and at first a good deal of inflammation resulted. The patient ultimately went away quite well.

Mr. WINGRAVE asked whether there was a tooth missing in Dr. Sandford's case?

Dr. SANDFORD, in reply, said there were indeed several.

Mr. LENNOX BROWNE then read notes of a *Case of Lymphadenoma of the Tonsil*, the patient, who was present, having been previously examined by the Fellows.

Rachel H., aged forty-eight, married, residing at Cardiff, was admitted on June 4, 1891, into the Central London Throat, Nose, and Ear Hospital, complaining of difficulty of swallowing, of two years' duration. Personal history: She is a woman of somewhat full habit, stout and flabby, of pale complexion and somewhat bluish lips — in fact, of very œdematous appearance. She has "never experienced a day's illness in her life" till twenty-seven months ago, when present illness commenced with the expectoration of large quantities of phlegm, and slight difficulty in swallowing. These symptoms, with vocal and articulative weakness, gradually increased. She has never suffered with bleeding, either from nose or uterus. There has been no loss of flesh, but her paleness has markedly increased during the past twelve months, coincidently with the

increase of the size of the swelling. Family history: Father died, aged sixty, of a decline. Mother died, aged sixty, of a disease exactly like what the patient has now. Had four brothers and sisters, who died at different ages from decline. She has borne six children, who are all living and healthy.

State on admission: She speaks as if her mouth were full of food, and articulation is almost obscure; the swallowing is extremely painful and difficult, which condition has increased rapidly during the last five weeks. Cannot swallow solids at all. There is neither cough nor pain, except when taking food. She is troubled with slight dyspnœa on exertion. On examination: There is a large roseate, tense and slimy mass to be seen occupying the situation of the left tonsil, and extending into the faucial aperture considerably beyond the middle line, and displacing the uvula. It is resilient, only slightly painful on manipulation, and does not fluctuate. The right tonsil is almost equally prominent, but deeply furrowed, and has more the appearance of an ordinary hypertrophied gland, whilst the left looks almost as if it were the subject of inflammatory œdema. The uvula is compressed and pushed forward, as

well as displaced, to the right of the median line. The tongue is protruded sluggishly, but straight, and is not much swollen. Hearing, taste, and smell: Normal. Heart: slightly dilated; action regular. Lungs: Normal. Thyroid gland is apparently atrophied. Lymphatics: There are several enlarged and painless glands to be felt in the neck and left axilla. Spleen is not enlarged. Urine: Normal. Blood: Hæmoglobin 9 per cent.; red corpuscles 4,000,000 per c.m.m.: white corpuscles, 1 in 200. No pigment spots anywhere.

June 8. Mr. Lennox Browne removed the greater portion of the enlarged right tonsil with the wire *écraseur*, with the result that in forty-eight hours she could swallow with great comfort, and speak more clearly, and expressed herself as feeling better than she had done for many months.

June 15. Examination showed that only the anterior portion of the right swollen tonsil had been removed, for another large mass was seen to be fungating from the posterior of the fauces. This was easily snared with the *écraseur*, and removed. The left side was then attacked, and several large pieces were evulsed by means of the wire loop and curetting. The whole mass from the two sides weighed nearly 400 grains.

Mr. WINGRAVE then read the pathological report on the growth in question, which was as follows:—

Microscopical examination by Mr. Wyatt Wingrave, of the tissue removed, showed that it is composed almost entirely of small round cells, the protoplasm of which is very scanty as compared with the size of the nucleus, a characteristic of lymphoid cells: these are embedded for the most part in a homogeneous matrix. In parts the characteristic tonsil arrangement and structure is visible.

Nature: Histologically it belongs to the "lymphoid" group of tissues.

The author of the case remarked that the disease was of sufficient rarity to merit exhibition. This was only the fourth or fifth case he had witnessed, in a constant hospital experience of over twenty-five years. The improvement of the patient's health and complexion were very marked, and were evidently the result of the operation, for internal treatment, consisting of a mixture of iron and arsenic and pills of iodoform, had not been pursued long enough to account for the benefit experienced. At present there seems to be no disposition to recurrence.

Dr. DUNDAS GRANT observed that it was a very interesting case, and it showed very clearly the advantage of attending regularly the meetings of the Association. He had had the advantage of seeing this case when the patient first came for treatment, and thanks to his having heard Dr. Frank's valuable and interesting paper, he had been enabled to diagnose it to his own satisfaction and to that of Mr. Lennox Browne, who afterwards confirmed the diagnosis. These cases were rare, and it was easy to overlook their nature. One met more often with lympho-sarcoma of one tonsil, but the bilateral enlargement, together with the presence of other enlarged glands in the body, helped one in arriving at a diagnosis of Hodgkin's disease.

Mr. LENNOX BROWNE then read an account of his second case, one of *Angioma of the Larynx, with Traumatism.*

Mr. C. A. C., aged forty, residing at Windsor, first came to me on May 29, 1891. He complained of hoarseness, effort, and fatigue of the voice, which had existed for two and a half years. He believed that it originated after exposure to the influence of a dense London fog.

Replying to questions, he admitted that he had suffered pain low down on the left side of the throat quite recently, especially in swallowing, and that after talking for a short time he had some gasping for breath.

I found considerable swelling and hyperæmia of the left side of the larynx, with what appeared to be some superficial ulceration of the pharyngeal aspect of the ary-epiglottic fold. This was covered with muco-purulent secretion, which did not disappear on spraying.

On enquiry of the patient, he told me that he had not seen any other throat specialist since he was first attacked, and my attention was not, therefore, directed to the possibility of traumatism as a cause of his trouble.

His general condition excluded any idea from my mind of either cancer or phthisis, and although the history was by no means confirmatory, there appeared some probability that the laryngeal lesion might be syphilitic. I accordingly prescribed some biniodide of mercury, and a diluted iodide compress to be worn over the larynx every night.

My attention had been so occupied with the condition I have described, and the swelling was so considerable, that I had not perhaps examined all the other parts of the larynx so completely as I should have done. However, my gratification to discover on the patient's second visit, a week later, that all sign of ulceration and inflammatory swelling had disappeared, except that the left cord was congested, was tempered by a surprise in the shape of finding a small, round, smooth growth, of a bright pink colour, at the anterior insertion of the vocal cords. On my telling him of this, the patient voluntarily confessed that he had not been loyal in his information to me on his former visit, for that he had suppressed the fact that he had quite recently seen another specialist on account of this growth, and had undergone eleven or twelve sittings for the purpose of its removal by the forceps. His last visit to this gentleman had been made less than a week before his first one to me ; and on that occasion the forceps had been used six times. He had been informed that the growth was twice caught, but could not be removed, and finally that, as the operation was admitted by the operator to be beyond his skill, he was recommended by him to a friend " over the way." The patient described the pain experienced at the last sitting as considerable, in fact as a regular " twister."

It was clear to me, therefore, that the condition I had seen a week before was due to traumatism, and this having been now reduced, I proceeded to at once remove the growth. This I was fortunate in effecting on the first introduction of a Gibb's snare into the larynx, which did not appear to require cocainization, with the result of an immediate improvement of the voice, which increases each day ; so that at the date of his third visit to me—June 17—it is almost normal.

Remarks.—I have not brought forward this case with the object of vaunting my own skill at the expense of another, but to illustrate a few points of some practical importance.

1. The danger of unguarded instruments for endo-laryngeal operations, which I have insisted on for the last fifteen years, and in which view I am glad to have been recently supported by Dr. Stoker and other Fellows of this Association. This danger is of course proportionate to the lack of experience and skill of the operator; but with guarded instruments, even if the growth is not removed, there is no fear of injury to normal tissues.

2. That while a growth in the anterior commissure of the larynx is, for obvious reasons, more difficult to seize with the forceps than in almost any other situation, it is absolutely one of the most favourable positions for the use of the snare, especially if the operator, having got the loop well in position, draws it forward on to the angle of the thyroid and presses the larynx from the outside—so as to make a good *point d'appui*.

3. The importance of microscopic examination of every intra-laryngeal growth on removal. In this case I should have judged from microscopic appearance that the little tumour was a smooth-surfaced papilloma or myxoma, whereas it turned out to be a thrombosed pile or angioma.

Lastly, the case affords an example of what is daily experienced in consulting practice, the extent to which one may be deceived by giving credence to the evidence of patients. Confessing myself, therefore, as misled by this patient's first mis-statement, that he had not recently been in other hands, I should offer the account of his previous treatment with much more reserve did it not bear internal evidence that it is the only reasonable explanation, in the light of after events, of the laryngeal condition as I first witnessed it.

Microscopical Examination of the removed Tumour by Mr. V. H. Wyatt Wingrave.—The size of the tumour is that of a small pea; it is of pink colour, and appears to have been sessile, as it has a clean cut and comparatively broad base. The surface is everywhere covered (excepting the base) with stratified, squamous, epithelial cells, on a well-defined basement membrane.

Below this, on one side, is seen an abundance of fusiform nucleated cells—visceral muscle-fibres; on the other, fine reticular connective tissue, showing slight mucoid changes, arranged very loosely, and containing numerous spaces lined with epithelioid cells—evidently vascular channels or dilated capillaries—the walls being extremely thin.

Beneath this, and towards the centre of the tumour, the tissue becomes more dense, and the nucleated cells fewer, until a dense non-nucleated laminated mass in seen, obviously non-vascularized fibrin, in the midst of which is some yellowish substance, evidently disintegrating blood. Scattered about the field are numerous masses of pigment, and several smaller vascular channels containing fibrin.

No gland substance is seen, and no evidence of a neoplastic process.

Nature of Tumour.—Judging from the larger quantities of pigment (*extra-cellular*), and the vascular evidences, it is highly probable that it is a "thrombosed pile or angioma," and that the fibro-myxomatous changes are secondary.

Histologically, it is purely innocent.

Sir MORELL MACKENZIE congratulated Mr. Browne on his success and suggested that this might in part have been due to the fact that the growth when removed by him was possibly only hanging by a pedicle as the result of the preceding operations. The last attempt at removal had taken place only a week previously. Moreover, it was very rare that any accident occurred as the result of the use of the forceps. He himself had used them many hundreds—he might even say thousands—of times, and Mr. Browne had seen him use them many hundred times, and he was not aware that any injury had ever been done to any part of the larynx by him. He had used at one time a pair of tube forceps, but he had discontinued their use on account of the possibility of some part of the instrument becoming detached and falling down the trachea. It had happened to him once that a blade became thus detached, and since then he had entirely given up the employment of that instrument. He remarked that the previous operator in Mr. Browne's case appeared to have introduced the forceps no less than six times on one occasion, adding that he personally made it an invariable rule never to introduce the forceps more than once at a sitting. He admitted that there was great temptation to transgress this rule because it was so disappointing to the patient and to the surgeon to stop when the first introduction of the forceps had failed, and the patient being naturally anxious to have something accomplished urged the operator to make another trial. Nevertheless, it was a feeling that ought to be resisted. The case Mr. Browne had reported, however, was interesting, independently of the question of treatment, for growths of its peculiar structure were rare in the larynx. He had only met with five cases.

Dr. DUNDAS GRANT was not prepared to be quite so exclusive in the use of any instrument as either of the eminent speakers who had preceded him. One must be selective. There were cases in which the guarded instrument was sufficient, and in such cases it was their duty to make use of it. At the same time they ought not to discard the forceps altogether. It was sometimes necessary. He had found himself able to remove growths by means of the forceps after the snare had failed even in highly skilled hands. It was, therefore, only right to remember that there was a field of usefulness for the forceps. At the same time those who valued the safety of their patients rather than their own capacity for manipulation would agree that the statement as to the better practice of using guarded instruments was a valuable one. It was, after all, only natural that the operator should have a leaning towards the instrument which he had been in the habit of using, but he ought to have an open mind in selecting the instrument for use in particular cases. He admitted, however, that with a growth at the anterior commissure of the cords no attempt should be made with anything but the snare for its removal. He used a Gibb's snare as modified by Dr. Bond so as to present either transversely or antero-posteriorly. There were, however, cases in which the forceps were equally to be preferred, and he instanced the case of a projecting body on one of the cords, which could be better removed by this instrument than by any other means. The idea of using the large forceps had been carried still

further by Gouguenheim, of Paris, and the principle upon which this operator proceeded seemed to be irresistible. Dr. Grant pointed out that the forceps employed by Gouguenheim were very much heavier than Mackenzie's, but the cutting portion was an inch or an inch and a half in length, and the blades met each other with the most perfect coaptation. The beauty of these forceps was that there was a considerable amount of scope above and below the level of the growth. If they used a pair of the ordinary Mackenzie forceps below the level of the growth they caught the growth between the shanks of the instrument and did not effect its removal, whereas with Gouguenheim's forceps, having so much more vertical length to come and go upon, they would be pretty well sure of catching it. He was personally in favour of a judicious eclecticism in the choice of instruments.

Dr. WARDEN mentioned a case of his own about two years since of papillomatous growth just underneath the left vocal cord. This growth always eluded the grasp of the forceps. He tried several times, adopting the plan suggested by Sir Morell Mackenzie of never trying twice at the same sitting. After four or five unsuccessful trials, it occurred to him to try that old-fashioned instrument, the horse-hair (bristle) probang, and with this he was enabled at once to achieve his object.

Sir MORELL MACKENZIE said he himself had made use of the probang, especially in children, and he had occasionally found it very useful. He pointed out that with a large instrument there was a possibility of injuring something, but still the importance of getting the growth away was so great that the risk sometimes had to be incurred.

Mr. WINGRAVE, in reference to Sir Morell Mackenzie's suggestion that the growth was possibly hanging by a thread, said that microscopical examination showed that there was a clean cut at the base, without any pre-existing ulcerative process.

Mr. LENNOX BROWNE, in reply, said that Sir Morell Mackenzie's generous suggestion as to what had been done by the previous operator did not account for the almost acute inflammation and swelling and distinct ulceration of the left side of the larynx, when the case was first seen a week after the first operation, and which subsided and healed so quickly as to clearly prove its traumatic origin. Certainly the growth was as cleanly cut off as possible, and there was no sign of any partial removal previously. In this he was corroborated by Mr. Wingrave, who knew nothing whatever of the nature of the case when he made his examination. He confirmed the practical utility of the plan adopted by Dr. Warden. They all knew that Voltolini used a sponge, and he himself had used a large cotton-wood probang—the wood well secured in the same way. He added that it was ten or fifteen years since he had first had a Gibb's snare which would turn in any direction, and he thought Dr. Grant must be mistaken in believing that there was any novelty in such an arrangement (as that with which Dr. Grant has credited Dr. Bond).

Dr. DUNDAS GRANT then read the notes of the following three cases :—

CASE I.—*A Case of Tubercular Laryngitis of the Proliferative Type,*

simulating Papilloma. Thanks to the kindness of a medical friend, I am enabled to narrate to you the history of a case of tubercular laryngitis, of the type specified in the title of my communication, and to show you the parts involved, as removed on *post-mortem* examination.

Ernest U., a Frenchman, aged twenty-eight, came under my friend's care with dyspnœa and other symptoms of laryngitis, on the 1st of last May. His previous history, as given by himself was, that six years ago, after drinking some iced beer, he was attacked with what he understood to be laryngitis, for which he was treated in the *clinique* of Dr. Fauvel, the renowned Parisian specialist; ever since then his voice has been hoarse, and he has suffered from frequent cough, with the hawking of mucus. For the last three years, however, he has had no treatment for his larynx. There was no specific history, and beyond the fact that his mother died of pleurisy, nothing suggestive of a family tendency to tubercle.

On the night preceding his application for treatment, he was suddenly attacked with dyspnœa, became blue in the face, and had great pain in the throat. In the morning, when he first came under observation, he had undergone some degree of improvement, but he had much stridor, with difficulty in phonation and considerable dyspnœa.

On examination, his fauces were seen to be reddened, his epiglottis to be red and rather œdematous, his aryteno-epiglottidean folds very markedly so, and his vocal cords red, œdematous, and thickened, with much mucus adhering to them. The cords did not meet on phonation, and ulcers were observed on the right cord and right aryteno-epiglottidean fold. Examination of the chest showed some slight bronchitis, but no evidence of tubercle.

A 20 per cent. solution of nitrate of silver was applied to the larynx, and he had a good night's rest, his stridor next morning having diminished, and his face having lost its cyanotic tint, and the appearance of the larynx giving evidence of a lessening of the œdema.

On the 3rd of May the œdema was much less marked, and there could be seen springing from the right vocal cord a pedunculated growth, which disappeared on inspiration and came up between the vocal cords on expiration, so as to prevent any apposition of the vibrating edges during attempts at the production of vocal sound. The breathing on the previous night was rather worse, but improved on his sitting up.

My friend endeavoured on the 12th of May to remove the growth by means of laryngeal forceps. The larynx, however, was extremely intolerant, and the removal was postponed till, by daily application of cocaine, it should become more used to operative interference. Up till the 16th he was fairly easy, the œdema having practically disappeared, and the growth being easily seen. The œdema, however, then returned in the neighbourhood of the cords; the patient had, in the afternoon, an attack of dyspnœa, became blue in the face, sweated profusely, and had retraction of the chest walls on inspiration. His condition was almost immediately improved by the inhalation of carbolized steam; and he became fairly comfortable, although he had still considerable laryngeal stridor.

On laryngoscopic examination the cords and the whole of the mucous membrane were seen to be red. This condition continued; the growth did not enlarge to any noticeable extent, but there was considerable ulceration of both vocal cords, and of the ary-epiglottidean folds. The ulcers were of irregular shape, had yellow bases, and did not seem to be deep.

On the 2nd of June I had the opportunity of seeing the case, and of noting, in addition to the appearances above described, a sessile tumour of considerable size in the inter-arytenoid space above the level of the vocal cords. I ventured to diagnose the case as one of that form of tubercular laryngitis in which the outgrowths simulate benign neoplasms like papillomata, and to suggest that tubercle must be present in the lungs. I succeeded, in my hurried attempt, in detaching a small portion of the growth, but not sufficient for microscopical examination, or to give any relief to the patient.

An examination of the lungs was made by a physician of eminence, but he could find no definite evidence of tubercle of these organs.

Early in the morning of June 6th, the patient, who had still great dyspnœa, had an attack in which syncope seemed the chief factor rather than asphyxia, and he died in spite of the performance of laryngotomy.

On *post-mortem* examination the larynx presented the appearance which I now show you :—

On opening from behind the laryngotomy wound is first seen ; above this and to the right is a small pedunculated mass, evidently hanging from what is left of the right vocal cord. Above this is an irregular mass of tuberculous tissue, extending as high as the ary-epiglottic fold, forming a large cushion, and occupying the whole of the right supra-glottic region, replacing the ventricular bands, and involving the sacculus. There is a similar mass on the left side, in a similar position, but no pedunculation. Just in front of the left arytenoid cartilage is a large ulcerated cavity, extending deeply to the thyroid cartilage. There is perichondritis of the cricoid cartilage on its inner surface. The ary-epiglottic folds are infiltrated and extremely thickened, the left showing signs of active ulceration. Everywhere there is evidence of great œdema, but there are no fistulous tracks. The posterior commissure was greatly involved, as is shown by microscopic examination. The epiglottis is unaffected.

The case illustrated several interesting points in connection with tuberculosis of the larynx—(1st) its *imitative character*. In this instance the clinical appearance suggested simple papilloma, for which it might easily have been mistaken. Gouguenheim read before the International Congress of Laryngology at Paris in 1889 a very instructive paper on the relation of papilloma and tuberculosis of the larynx, to which I was to a considerable degree indebted for being able to diagnose, *intra vitum*, the nature of this case. I have seen two cases in which tuberculosis imitated carcinoma of the larynx so exactly as to lead to unfortunate operations by experienced laryngologists. (2nd) The degree to which the *physical signs in the thorax are masked by the co-existing laryngeal disease.*

In the discussion on Dr. Grant's case of tuberculosis of the larynx, Dr. SNOW agreed that when there was extensive laryngeal disease, it

was very difficult to make out the presence of disease in the lung, and the lung mischief was consequently often found, *post-mortem*, to be much more extensive than had been supposed.

Mr. LENNOX BROWNE said the author was to be commended for bringing the subject before them, because it had not unfrequently been said that laryngoscopists never saw further than the throat, and in cases of laryngeal phthisis overlooked the pulmonary disease. The author's frank acknowledgment of the difficulty often experienced in detecting the extent of the lung changes when the larynx was greatly involved, was a sufficient answer to this charge, and his experience would be confirmed by all laryngologists. The fair retort that chest physicians often neglected the larynx, was one which could not be so easily explained away.

Sir MORELL MACKENZIE was glad the author's remarks had been confirmed. He pointed out that in cases of tubercular aphonia, due to tubercular ulceration, they could not get vocal resonance, and this was felt to be such a great disadvantage by Dr. Stone, that he had invented a kind of musical instrument by which the patient was enabled to produce a sound for the purpose.

CASE II.—*A Case of Fibro-Sarcoma of the Palate removed by operation.* Mrs. N., aged forty-six, was sent to me by Dr. Sunderland, of Bexley Heath, on the 6th April, 1891, for my opinion concerning a tumour in her palate. The patient was a hearty, well-developed lady of active business habits, and was in the enjoyment of first-rate general health. She complained that at times, when she got hot and tired, her tongue seemed to swell and to come in contact with her tonsils and uvula. This first came on two years ago, and the symptoms then lasted with some severity for a short period, but diminished until they again became very prominent a few days previous to her coming under my observation.

On examination there was seen to be a general, and not very pronounced, bulging of the right half of the soft palate, which was noticeably hampered in its movements during phonation and nasal respiration, and a projection of the right tonsil. On palpation an ovoid tumour of dense consistence could be felt in the region described, and apparently continuous with the tonsil. The post-nasal space was singularly free, and the finger could with ease be passed up to both posterior nares. There was no ulceration, and the mucous membrane was pretty freely movable over the tumour. There were no enlarged glands.

The situation and growth of this circumscribed tumour suggested the probability of its being a fibro-adenoma, but the age of the patient, and the fact of its extending into the tonsillar region, left a possibility—in view of Mr. Stephen Paget's observations and deductions (St. Bartholomew's Hospital Reports)—of its being sarcomatous in nature. In the former case the removal would be a simple matter, in the latter the difficulties might be considerable.

I advised operation, and—*in utrâque fortunâ paratus*—hoping for the more propitious of the two conditions, carried it out on the 10th of April with the assistance of Mr. Percy Jakins and Dr. Sunderland. The latter administered chloroform by means of Junkers' bottle and bellows, with a catheter attached. The layers of the soft palate were snipped through

with scissors, and an opening was thus made through which I was able to introduce my finger so as to explore the tumour more accurately. I found that it was a firm, rounded, circumscribed mass, and that by means of my finger-nail I could loosen it from its bed of connective tissue. It extended downwards externally to the tonsil, pushing that body inwards, but without invading its substance. On all sides, except the outer one, it was easily liberated, but it was there more firmly attached to the inner surface of the lower jaw. A free use of the finger-nail, and a very limited application of curved blunt-pointed scissors, enabled me to break down the adhesions without difficulty. The capsule of the tumour was slightly torn, but on careful examination it was ascertained that none was left behind. The tumour was then easily shelled out, and was found to be oval in shape and of the size of a bantam's egg. The posterior layer of the palate was left whole, and the hæmorrhage during the operation was quite insignificant.

The after-treatment consisted in the use of antiseptic mouth-washes, especially after food. Dr. Sunderland, who then took charge of the case, informed me that for a few days after the operation she was troubled with much coughing, owing in all probability to the blood inhaled during the chloroform narcosis, and that she had considerable pain on swallowing, but this soon passed off. Her temperature at noon for the first few days was 100°, 102°, 101°, 100°, and on the fifth day 98·4°. She had some swelling on the right side of the neck, close to the angle of the jaw, and could hardly separate the teeth, but these conditions speedily disappeared, and on the 30th of April Dr. Sunderland examined the throat and observed that the position of the tumour was marked only by a few granulations.

The patient came to show herself to me on her way back to Guernsey. She then professed herself as perfectly well and comfortable, able to open her mouth and to swallow without difficulty. There was a small granulation at the situation of the wound, but no trace of tumour could be felt.

The tumour, which weighed 470 grains, was invested with a firm capsule, and appeared to consist of irregularly massed fibrous tissue.

Mr. Wingrave kindly made a microscopical examination of the growth (a section of which is exhibited), and reported it to consist chiefly of fibrous tissues, with a few cells suggestive of sarcoma, and here and there a disposition of cells in imperfect gland-like formation. He considered it practically non-malignant.

CASE III.—*Subsequent History of a Case of Intrinsic Cancer of the Larynx treated by Thyrotomy.* The case of which I have now to give you the final report is that of a man whom I brought before the Association at a meeting on the 28th of November, 1890. The history of this case was reported in the proceedings of the Association in the JOURNAL OF LARYNGOLOGY for last January, and subsequently in the "British Medical Journal" of March 28th, 1891.

Briefly, he was referred to my care on August 23rd, 1890, by Dr. Gordon Holmes, who had made a diagnosis of carcinoma, in which my colleagues and I quite concurred. He had been hoarse for eight months, the voice gradually dwindling to a mere whisper, and he had latterly a

pain running up to the left ear, apart from functional use of the larynx. There was a slight fulness of the left half of the larynx, and on laryngoscopic examination there was seen an ulcerated nodular mass occupying the whole area of the left vocal cord, extending also to the ventricular band. *The cord itself was completely immobile.* There was a slightly enlarged gland behind the thyro-hyoid space. I removed a small portion of the growth by means of forceps, and Mr. Wingrave promptly prepared a section which confirmed the diagnosis of epithelioma.

On the 27th of August I opened the larynx in the manner described in my previous communication, and removed the soft parts from the interior of *both* sides of the larynx. He made an excellent recovery from the operation, and left the hospital on the 22nd of September. Laryngoscopic examination showed on the right side an arrangement of the mucous membrane singularly like a vocal cord, and moving on phonation. The left side was occupied by a cushion-like fulness, covered with a healthy-looking mucous membrane. The glandular enlargement was certainly no greater (later it almost disappeared).

As I said in my report in the " British Medical Journal," the question of recurrence could only be answered by further observation. Unfortunately, though hardly unexpectedly, the evidence of the return of the growth was not much longer delayed, for, after having resumed his business avocation, the patient soon found that the production of his hoarse, but audible, voice became difficult and painful. He " caught a cold," and had a croupiness in his breathing. The tissues of the interior of the larynx were swollen, but, as looked at from above, no ulceration was visible, except below the anterior commissure. At this spot we had frequently seen a little mucus accumulate, and I therefore removed the silver-wire stitch I had left to retain the alæ in conjunction. Strange to say, the right half of the larynx appeared the most severely affected, and on that side a lymphatic gland at the level of the thyro-hyoid space became distinctly enlarged. On May 6th I introduced a tracheotomy-tube through the tissues previously traversed by Hahn's canula ; but, although his breathing was improved, no form of tube was found to be comfortable, and the patient sank more from pain and exhaustion than from any mechanical trouble arising from the growth.

On *post-mortem* examination the body was noted as thin, but not remarkably emaciated. In the middle line of the neck was the opening communicating with the larynx (continuity upwards of the tracheotomy wound), from which some small fungating masses projected. On removal of the larynx, numerous hard lymphatic glands were discovered in front of, behind and beneath both sterno-mastoids—one particularly large one close to the right side of the hyoid bone—and several others scattered about the supra-clavicular regions. The larynx contained abundant evidence of new growth. On division of the cricoid cartilage posteriorly on the middle line, two symmetrical fungoid masses were seen almost filling the larynx, extending from the situation of the ventricular bands as far down as the bottom of the tracheotomy wound. The cricord cartilage is only slightly involved by the growth, but the thyroid to a very great extent, especially the right ala. On the right

side of the root of the epiglottis is a hole of the diameter of a goose quill, which is the upper opening of a sinus leading to the new growth. There is considerable thickening of the remaining soft tissues, but the epiglottis is evidently not involved. The largest (thyro-hyoid) lymphatic gland was found on section to be infiltrated with epithelioma. The others were free from that disease. The thyroid gland was uniformly enlarged, and very firm, but although its condition suggested clinically that it was infiltrated with malignant disease, the microscope showed that its enlargement was due to chronic inflammatory changes. The other organs were normal.

Satisfactory as this case is from the point of view of mere operative *technique*, the ultimate result is not of a kind to encourage operation even in such a comparatively favourable case. In this instance, the temporary freedom from the presence of the disease was bought at a decidedly too great sacrifice when we recall the duration of life enjoyed by some who have been treated by simple tracheotomy. I may recall to you a case illustrating this in my own practice, and which I brought before this Association on March 27th, 1889. I performed tracheotomy for her on the 26th of July, 1886, on account of dyspnœa threatening her life, and quite recently I heard of her as being still alive, though with enormous glandular swellings in her neck. Whether a prolongation of such a life is desirable is a difficult question to decide. The matter is narrowed down considerably when we reflect that in a large percentage of laryngeal cancer there is no hesitation possible in refusing operation. In the few remaining cases the question lies between operation, with the great probability of a speedy demise, but with the remote chance of respite or total reprieve, and tracheotomy, with a practically certain prolongation of a life of not inconsiderable discomfort. I hold that we are not justified in discarding extirpatory operations altogether, as long as the alternatives are clearly laid before the patient and his friends. At the same time there will always be cases where, as regards diagnosis, it is justifiable to entertain an amount of doubt—albeit philosophic doubt—and, accepting thyrotomy as being with modern *technique* a comparatively safe operation, I see no reason why it should not be practised for exploratory purposes, further proceedings being determined by the additional information thus obtained, the possibilities having been previously subjected to the judgment of the surgeon and the will of the patient.

Sir MORELL MACKENZIE showed *a specimen of a congenital growth in microscopical section removed from a young lady, twenty-two years of age, supposed to have had polypus from birth.* The nurse had removed some solid substance from the nostril when she was born, and she never afterwards was able to breathe through or smell with the nostril on that side. When the young lady came, a few weeks since, he found a large polypus occupying the left nasal passage. He had operated upon her a number of times, and removed a quantity of growth. Much, however, was left, and he therefore subsequently operated again under ether. Dr. Rawes, the demonstrator of physiology at the London Hospital, had

made some sections of the growth for him, and he considered the growth to be a fibrous polypus, which had undergone mucoid degeneration. Considerable hæmorrhage had followed the last operation and had continued for two or three days. The interest of the case was partly pathological and partly clinical, on account of the great rarity of congenital growths in the nose. He knew of no other case of the kind on record, and polypi were in any case very rare among young people.

Mr. WINGRAVE asked what was the exact spot from which the growth arose.

Sir MORELL MACKENZIE, in reply, said from the inferior turbinated bone, in fact from the whole of the side of the nose, but not from the septum. It extended right back to the pharynx.

Mr. WINGRAVE said that judging from the histological features one had to consider the possibility of slight variations in development. It might of course have been congenital, but histologically this would not seem to have been the case.

Dr. RAWES observed that there was not much to be said about the structure, except that it was covered on one side by columnar ciliated epithelium. Underneath the basement membrane there was a good deal of adenoid tissue. These were not altered. Below there was a considerable quantity of fibrous tissue, with strangely-coloured cells in it. The structure contained a number of small spaces, which looked as if they had been filled with mucus. These had obviously run together, forming irregular spaces, separated by little shreds and remains of fibrous tissue. In places the tumour was seen to be highly vascular. In one place there was a capillary running through an angle, where it had undergone mucoid degeneration. It had struck him as curious that it should have been so vascular, and yet had degenerated. It was very unusual to find a purely fibrous growth undergoing mucous degeneration.

The result of the ballot was then declared, and the following gentlemen were elected as office bearers for the year 1891-92 :—

President: Mr. LENNOX BROWNE.

Three Vice-Presidents :

England—Dr. WARDEN, Birmingham ; Scotland—Dr. J. MAXWELL ROSS, Dumfries ; Ireland—Mr. KENDAL FRANKS, Dublin.

Six other Members of Council :

Metropolitan—Mr. MAYO COLLIER ; Dr. ORWIN ; Mr. HOVELL ; Dr. WOLFENDEN. Two Extra Metropolitan—Dr. J. DAVISON, Bournemouth ; Dr. BARCLAY BARON, CLIFTON.

Secretary: Dr. GEORGE STOKER.

The meeting here adjourned.

GENERAL MEETING, FRIDAY, NOVEMBER 27, 1891.

The President, Mr. LENNOX BROWNE, IN THE CHAIR.

THE minutes of the last General Meeting were read and confirmed. The following gentlemen were unanimously elected Fellows of the Association:

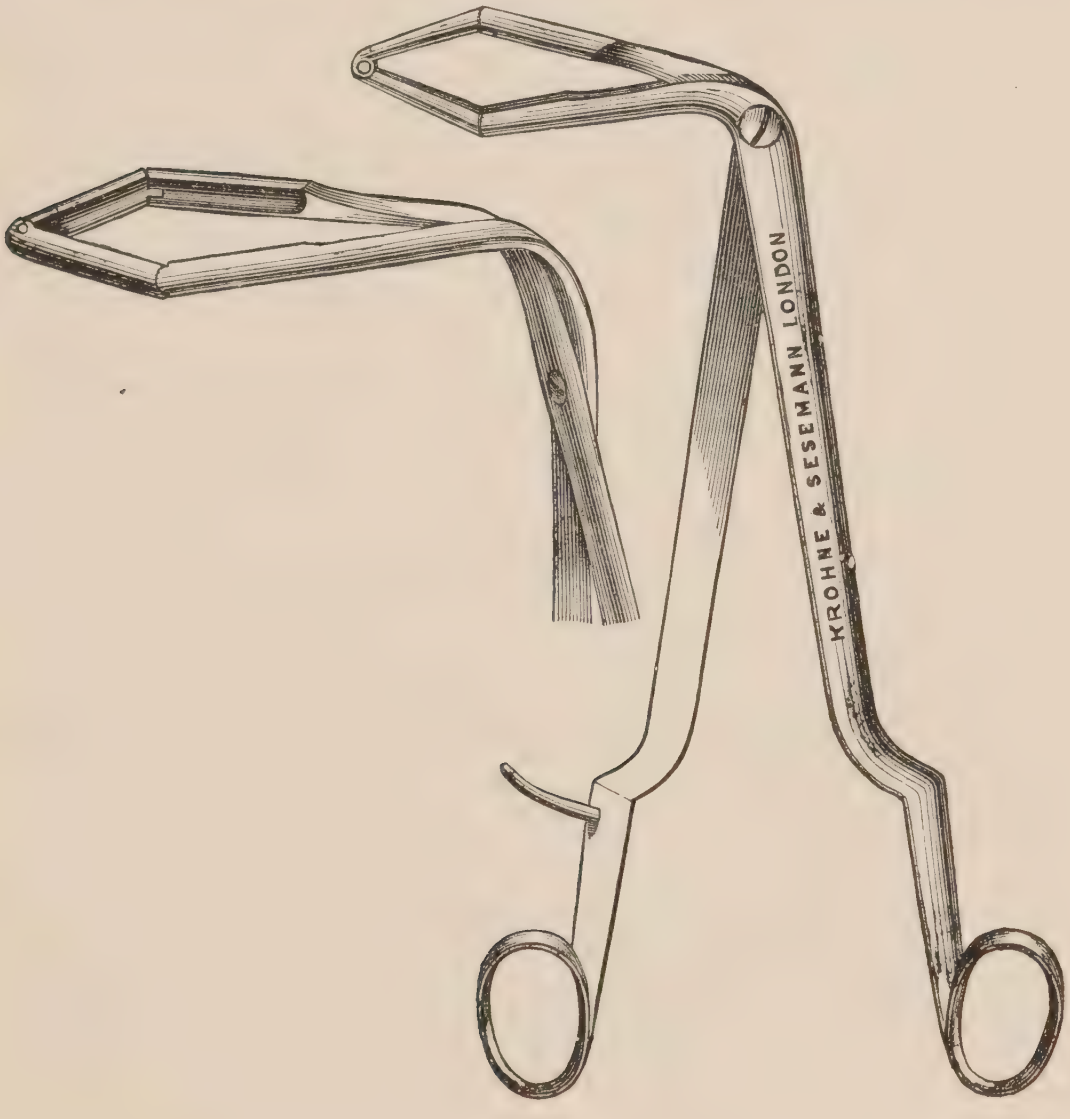
Dr. F. VICARS, London.

Dr. NEIL MACGILLYCUDDY, Bournemouth.

The Hon. Secretary read a Statement of Accounts, showing a balance in favour of the Association of £63 18s. 10d.

It was proposed by Dr. MATHESON, seconded by Dr. WOLFENDEN, and passed unanimously:—"That the accounts shall be duly audited, "printed and forwarded to each member of the Association, at the end "of each financial year, and that two auditors shall be appointed by the "Council, one from the general body of the Fellows, and one from the "Council."

Dr. DUNDAS GRANT, on the invitation of the President, showed a *Guarded Laryngeal Forceps*, of his design. He described it as a



Mackenzie's cutting-forceps, to the end of each blade of which was hinged a prolongation, also with cutting edges. These prolongations were jointed together at their distal extremities. The result was that when the forceps were opened, by separating the handles, the blades proper opened like the limbs of the letter A, the prolongations, on the other hand, like those of the letter V. There was thus formed a lozenge-shaped space into which an outgrowth readily slipped. It would be easily seen that the instrument could be passed into the larynx with perfect safety. It was intended for the removal of growths projecting into the glottis from the sides of the larynx, not for those on the upper surface of the cords. The instrument was made in two forms, one with lateral, the other with anterior and posterior blades.

Mr. MARK HOVELL said he was prepared to criticize the instrument, but hoped that Dr. Grant would accept his remarks in good part.

He considered the instrument ingenious, but, in his opinion, it was so safe that it was practically useless. It was only applicable for the removal of growths from the central portion of the sides of the larynx, but all present knew that frequently, when there were growths in this position, there were others also attached to other parts of the larynx, and these other growths were sometimes found involving the upper surface of the vocal cords.

Dr. Grant had admitted, however, that his forceps were not suitable for removing growths in the latter situation. Dr. Grant had described the instrument as Mackenzie's forceps guarded, but in his opinion they were Mackenzie's forceps spoiled.

The lateral forceps which Dr. Grant had alluded to, but had not shown, for removing growths from the commissures, would be of but little use for the removal of growths from the anterior commissure. In order to remove a growth from this situation, it was necessary to pass the anterior blade of Mackenzie's antero-posterior forceps between the base of the growth and its attachment, the posterior blade being merely closed on the growth to prevent it from falling into the larynx. The space in the anterior commissure was so narrow, being merely the point of the V-shaped opening, that it would scarcely admit the width of the blade of Mackenzie's forceps, and certainly would not allow Dr. Grant's forceps to be introduced and dilated to the width of the growth.

Dr. Grant's forceps might perhaps be used for a growth attached to the posterior commissure, but, even then, he thought the extension downwards of the blades would prevent as much of the growth being removed as could be taken away with Mackenzie's forceps.

Dr. GEORGE STOKER said the forceps were very ingenious and their construction very interesting. His view was that when one used that kind of instrument there was no chance of seeing anything beyond the forceps ; and he maintained that to remove a growth with certainty to the patient and justice to the operator it was indispensable to see what one was about. This criticism applied not only to these forceps, but to all instruments of the kind.

The PRESIDENT said he had not had any oppportunity of seeing the forceps used, and it was difficult either to praise or condemn an instru-

ment until it had been submitted to that test. It certainly seemed to offer something in the way of a guard, which Mackenzie's did not. Moreover, there was a better chance of securing one's hold on the growth and preventing slipping. Personally he had never introduced an unguarded instrument into the larynx, yet it was very seldom that he met with a single growth which he did not remove at the first attempt. He thought the snare was *par excellence* the instrument for removing growths from the anterior commissure. There was great difficulty in getting at the base of the growth in the anterior commissure with any sort of forceps, antero-posterior or lateral, though he would in such cases prefer a lateral pair. With reference to the necessity for seeing the growth they must in all cases be prepared, even with the use of cocaine, for some closure of the larynx, and learn to guide the instrument from knowledge of its situation, and they must, to some extent, work in the dark. Still it was a manifest advantage to have an instrument which took up the least space, and so far he was in agreement with Dr. Stoker. He thought Dr. Grant's instrument would enable them to get closer to the growth with safety than was sometimes possible with a snare in the case of smooth and hard non-pedunculated neoplasm.

Dr. WARDEN (Birmingham) said he had been very much struck with the absolute safety offered by this instrument. Even if one failed to catch the growth, at least they would do no harm. One met with many of these growths lying underneath the cords, and then he imagined it would be quite possible for the growth to slip out of the grasp of the instrument.

Mr. WINGRAVE had seen the forceps used and was quite satisfied as to their practicability.

Dr. GRANT, in reply, thanked those of the speakers who had approved of his invention, in which he admitted he took a paternal interest. Personally he was disposed to advocate the greatest eclecticism in the choice of instruments. He contended that they could not have too many instruments, or too many modifications of instruments. The same rule applied here as with dentists. Mr. Hovell had observed that the anterior commissure was a most unfavourable part of the larynx for his forceps to work in, but that was no reason for enlarging to such an extent upon the objection to its use in that narrow sphere of action. It was a pity to concentrate his attention upon objections which were so limited in their scope. As he (Dr. Grant) had said before when advocating the use of unguarded instruments, the anterior commissure was the seat of election for the use of the wire snare, and not for forceps at all. He asked Mr. Hovell to be good enough to give the forceps a trial, and to let them know the result. He himself had recently used the instrument to remove a growth from the edge of the vocal cord, and it had answered very well.

The PRESIDENT showed a girl, aged eighteen, living at home in her family, with a *Primary Chancre of the Cheek*. He called attention to the unusual situation for such a lesion, and said it was very difficult to get at any history of the source of infection. It was just at the angle of the jaw, and the patient stated that it had first appeared as a painless pimple, which subsequently formed a scab. It had been treated by black wash, and she was having internal treatment suitable to the diagnosis. The

glands were very much enlarged and there could be no doubt at present as to the nature of the lesion. (Since the exhibition of the case it has been elicited that about a month before the appearance of the pimple she was bitten on the cheek by a man who at the time was suffering from a sore throat.)

Dr. DUNDAS GRANT showed *Two Cases of Stenosis of the Larynx due to Tertiary Syphilis.* In one the dyspnœa was so intense that operative interference was called for. Intubation was attempted, but there was such a dense constriction below the glottis that no benefit was effected thereby, and tracheotomy had to be performed. The other was a much less advanced case and was expected to respond to specific treatment.

Mr. HOVELL showed a *Case of Malignant Disease of the Thyroid Gland* and one of *Epithelioma of the Vocal Cord.*

MICROSCOPIC AND OTHER SPECIMENS EXHIBITED BY MR. WYATT WINGRAVE.

1. Section from a *thyroid growth*, which shows numerous round masses composed of concentrically arranged elements, similar to Hassell's corpuscles of the thymus gland (also shown).

2. Bodies of strikingly similar characters are present in this section, which was taken from a *growth attached to the dura mater.* These are considered corpora-amylacea, and occur frequently in the meninges of both brain and cord, normally. (Stained with hæmatoxylene.)

3. *Colloid Epithelioma of the Thyroid.*—The characteristic "cell nests" of stratified epithelioma are well shown to be undergoing a colloid change. It is interesting as being a primary growth in this situation. (Hæmatoxylene and eosin.)

4. *Sebaceous Adenoma of Lip.*—Large saccules or alveoli with thin walls are filled with small spheroidal cells, retaining the original type. It was removed from a woman aged sixty, having been five years in growing. Size of growth equal to that of a cob-nut. (Hæmatoxylene.)

5. *Transverse and horizontal sections of Skeletal Muscle Fibres* undergoing "*Zenker's degeneration.*" There is a considerable increase of the inter-muscular cells and the "cloudy or waxy" character of the fibres is in strong contrast with the natural striation. From a case of laryngeal and pulmonary phthisis. (Hæmatoxylene.)

6. *Interstitial Myocarditis in Diphtheria.*—The fibres show cloudy and granular changes, with a marked increase of the interstitial cells in the centre of each fibre; clustered around the nucleus will be seen pigment granules.

7. A vertical section through the maxilla and ethmo-vomerine plate of a young deer: showing Jacobson's organ partly surrounded by its cartilage, and attached to the lower extremity of the cartilaginous septum. From the upper third of the septum a tubercle or spur will be seen projecting opposite the interval between the lower and middle turbinated bodies.

A dry specimen taken from a child, aged six years, showing the *Condition of the Nasal Septum* at that period.

A macerated specimen, illustrating the *Development of the Cranial base.* (Kindly lent by Mr. Bland Sutton.)

Dr. DUNDAS GRANT on *Lichtwitz's Method of Exploratory Puncture and Irrigation of the Antrum through the Inferior Meatus.*

I had the pleasure a few months ago of reviewing M. Jeanty's brochure on "Latent Empyema of the Maxillary Antrum," detailing the method to which I wish to draw your attention. It is now no longer necessary to employ the term "latent" to these cases in the way in which it was at first used. The latency is relative, and the cases originally so described are quite obvious in the present state of our knowledge of the subject. The antral empyemas which were not latent were cases presenting the symptom peculiar to distension of the cavity. We now know that it is a rare thing for purulent exudation to cause distension of the antrum, and, according to Virchow, when there is distension, it usually depends on the presence of a cystic tumour.

That the diagnosis of empyemas is in many instances provisional only, until some form of exploratory puncture has been practised, will, I think, be allowed by all candid observers. In a very large--probably by far the largest—number of cases, the symptoms and signs are to us quite unmistakable ; but we can never make assurance too sure, and a simple method for making a confirmatory exploratory puncture before extracting a tooth or boring through the alveolar process is surely not an unwelcome addition to our routine practice.

Lichtwitz's method, which I have practised in a number of cases, consists in the penetration of the antrum by means of a fine trocar and canula pushed through the outer wall of the inferior nasal meatus and the subsequent irrigation of the cavity by means of a suitable syringe fitted into the canula. The fluid contents are then washed out through the natural orifice of the antrum, and the presence or absence of any reasonable amount of pus verified.

The *instrument*, as described by Jeanty, is a straight trocar, of ten to twelve centimètres in length and having a diameter of a millimètre and a quarter to a millimètre and a half. The canula is made of steel. I may

add that I find a shorter instrument, the canula measuring three inches, the trocar three and a half, more convenient ; and that, in view of the narrow calibre of the canula, I have added a small funnel-shaped tube to the proximal extremity of the instrument, so that an ordinary syringe may be easily adapted to it.

The *preliminary measures* consist in the clearance of the nose by blowing, and the use of some form of douche or syringe (I use a solution of borax and boracic acid or a weak solution of lysol with Lefferts' coarse spray). The inferior meatus is then cocainized, and for the purpose of this operation I think it is better to apply the solution on a pledget of

cotton-wool which can be pushed underneath the inferior turbinal rather than by means of a spray.

The *puncture* is accomplished by introducing the instrument, with the trocar, drawn within the canula, as far as the middle of the inferior meatus, the point being directed as much outwards and upwards as possible. At this stage I find it necessary to remove the speculum, as the handle of the instrument has to lie across the middle line. The point of the trocar is then protruded and carefully pushed through the thin inner wall of the antrum. A warm, clear, antiseptic solution (borax and boracic acid) is syringed into the canula, from which the trocar has been withdrawn, and the liquid contents of the antrum driven out through the normal opening. The patient's head should be bent forwards, so that the escaping fluid may be caught in a clean basin for inspection by sight and smell.

The *sources of difficulty* are very few. There is a tendency not to push the point sufficiently outwards, so that instead of perforating the wall of the antrum we perforate the upper part of the inferior turbinal, and the fluid injected passes simply into the pharynx and sets up an amount of choking, by which the error—which only requires mentioning—may be recognized and corrected. It may be necessary to select a second point for puncture if the one first chosen is found to be too resistant.

I have employed the method in about a dozen cases with every satisfaction, both positive and negative results being obtained, very much—I am bound to say—as I was prepared to expect from my analysis of the other signs present.

Jeanty points out a *possible fallacy—i.e.*, in case of the antrum being divided by a septum, a negative result may be obtained owing to the canula entering and irrigating one compartment which may be healthy; while the other compartment may be the seat of an empyema to which the troublesome symptoms are due. This is, however, an occurrence of the utmost rarity.

The *scope* of this proceeding must not be mistaken. It is simply intended for diagnosis and not for treatment. At the same time the astonishing and convincing relief we are able to afford the sufferer before leaving our own consulting room by this simple means is calculated to encourage patients to submit to Cooper's classical operation, who might otherwise have hesitated to approach the redoubtable "dentist's door."

I can look back on cases in which, could I recall the past, the prompt adoption of this exploratory irrigation would have been eminently satisfactory.

Dr. STOKER said as he had a case of the kind recently, he was glad to have the opportunity of expressing his opinion on the procedure mentioned, and on other points connected with the consideration of abscess of the antrum. This method would, perhaps, be serviceable, but his experience was that the only symptom which usually led them to form a diagnosis of abscess of the antrum was the escape of pus from the natural aperture of exit, through the opening into the meatus of the nose. There might be pain at the same time. For purposes of diagnosis,

therefore, the method could not be said to be necessary. With regard to treatment, he thought it was still less necessary.

Dr. GRANT said he had expressly stated that the method was not intended for purposes of treatment.

Dr. STOKER said that was so ; but even if Dr. Grant did not use it for purposes of treatment, others did so. From this point of view it was not to be commended, because the opening was not at the most dependent part. He thought the proper course was to take out the tooth. Dr. Grant certainly spoke of irrigating the antrum by the artificial opening, in order to compel the offensive fluid to flow out higher up. He himself thought it would be better to irrigate from above, and to force the fluid down.

The PRESIDENT said that the diagnosis was really not very difficult. If they saw pure pus issuing from the upper part of one nostril, of the offensive character of which the patient was conscious, they might be almost sure that they had to do with a case of empyema of the antrum, even without any special knowledge, and particularly if there was a history of toothache. The President said the method now advocated for purposes of diagnosis constituted a system of treatment, which was no new thing, for it had long been employed by Stöerk, instead of clearing the cavity out through the socket of the tooth. He observed that during the first ten years at the Throat Hospital he never saw a case of abscess of the antrum. It was not even recognized although Mr. Spencer Watson had mentioned it in the first edition of his book in 1875, and the first cases were shown by himself at the Harveian Society in 1879. He never had any difficulty in diagnosing it, and he could only remember one case in which he had perforated and did not at once come upon any pus. Curiously enough, however, in twenty-four hours there was a copious discharge of broken-up caseous *débris*, with after-discharge of pus. When one spoke about taking out a tooth he would remind them that the history was usually that the patient had complained of toothache. The tooth had been extracted, and some time afterwards there had been a discharge of pus from the nose. Consequently there was no need to pull out a tooth or make an incision. He preferred a treatment which would be directly curative, and not only diagnostic. He thought that the attempt to demonstrate the transparency of the contents of the antrum by elaborate means of illumination was an ultra refinement of diagnosis and quite unnecessary. With all respect, he thought the present method came under the same category.

Mr. WINGRAVE said that he was able to emphasize the diagnostic value of the method, and recalled Dr. Grant's attention to a remarkable illustration in his own *clinique*. The patient complained of an unpleasant smell of many years' duration ; nothing was discovered by inspection, but syringing of the antrum by Lichtwitz's canula (which demonstrated pus) was followed by violent sneezing, after which huge masses of fœtid caseous matter were blown from the nostrils. Subsequently a large opening was discovered leading to the maxillary sinus further back than the normal hiatus.

Dr. STEWART said it might be within the recollection of his listeners that he had read a paper at Bournemouth to show that it was possible to diagnose most cases of abscess of the antrum by syringing it through

the natural opening. Dr. Grant said it was often impossible to find the opening in the middle meatus of the nose, and it might be that sometimes there was no opening. He had, however, treated several cases during the last few years, and had no difficulty in diagnosing them by the natural opening. He took a metallic catheter, bent rather more than normal, and with a little care he generally managed to introduce it easily enough. If necessary, a hilum should be used. He believed that in all cases the antrum might be so syringed. If one of the most characteristic signs of the affection was the discharge of pus by the nose, that showed that there must be a natural aperture to be found with a little trouble. With regard to using it as curative treatment, it was well known that a surgeon in Cracow (Mickowitz), read an interesting paper on this subject some years ago, and he contrived a kind of chisel at right angles, with which he penetrated the anterior wall and washed out the cavity.

Dr. Grant, in reply, urged that there ought to be in a young and progressive society like this a greater spirit of receptivity. It was his duty to ransack the literature of the subject to get abstracts for their Journal, and so soon as he came across something which appeared to him of interest and novelty he hastened to bring it before them both in the Journal and at their meetings. He agreed with everything that had been said as to the escape of pus through the natural passages. When this welled up under the middle turbinated bone it was pretty certain what was the nature of the case, but they would remark that several observers had been led into errors of diagnosis by allowing themselves to be guided by this symptom alone. He mentioned an example of a case of disease of the turbinated bone simulating abscess of the antrum. There was also a very interesting observation published by Greville Macdonald of cyst and abscess of the middle turbinated body simulating antral disease. They all doubtless knew a good deal about this affection, but surely even the youngest and the stupidest[1] of them must feel that he was not infallible (the wiser ones felt so), that finality had not been reached, and that more might still be learned about it. As to the irrigation being preferable from above, that was certainly a very good plan, but if, as was often the case, the turbinated bone was much swollen, the orifice would be difficult or impossible to find. In reference to the proposal to pass the trocar through the middle meatus he pointed out that the higher they went the greater was the risk of puncturing the orbit. Consequently it was much safer from the inferior meatus. He admitted that if, in certain cases the aperture was more difficult to find than usual, it was in a certain proportion of cases larger than normal, and therefore easier to light upon. No one would dispute that the sacrifice of a tooth which could be retained was something to regret. Moreover, supposing there was more than one diseased tooth it was not easy to say for certain which tooth was the one in fault. That hypothesis, too, assumed that the teeth were always the cause of the disease. Personally, he thought they were, but many very respectable observers had come to the conclusion that in the majority of instances the affection arose from disease in the nose. It was possible that some of the cases did arise thus,

[1] "We are none of us infallible, not even the youngest of us," has said the Master of Trinity College.—D. G.

and he suggested that we might see our way to establish a classification by saying that the cases which were cured by irrigation were of nasal origin, while the others were due to disease of the teeth. He merely threw this out as a suggestion. The best way to arrive at a right conclusion in deciding which method to pursue, whether to sacrifice a tooth or to employ Lichtwitz's simple method of exploration, was to apply the argument to their own persons, when he thought they would experience very little hesitation.

The PRESIDENT pointed out that even if a diseased tooth were the starting point, it would not suffice to keep up the abscess if treated by irrigation.

Dr. MIDDLEMASS HUNT'S paper on *A Case of Croupous Rhinitis.*

On the 28th of August of this year I was consulted by a lady, the wife of a medical man, regarding a nasal trouble of which she gave the following history.

Ten days previously she was attacked with what seemed to be an ordinary cold in the head, with profuse, one-sided discharge, and complete, continuous obstruction of the right nostril. She also complained of a very disagreeable smell in the nose. At the onset of the attack there had been slight rise of temperature (100·2° F.), but for a week it had been normal. She did not feel ill, though for the previous six months she had not been in her usual health.

On examining the nose, the obstructed side was found to be lined throughout, so far as one could see, with a thick, white membrane, bathed in a watery discharge. On the left side the mucous membrane was swollen and congested, but without any trace of deposit on its surface.

On removing a portion of the false membrane from the septum, to which it was loosely attached, a raw and slightly bleeding surface was exposed. I found it impossible to get a large piece of membrane as it tore so easily in trying to remove it.

After removing most of the membrane, I insufflated some iodol and gave the patient an alkaline and antiseptic spray to use. When she returned next day, the surface was again covered with false membrane, and a similar condition had now developed on the tonsils. Here the membrane was of the same character as in the nose, but on removing with forceps no bleeding occurred.

For the next four days, though I removed the membrane from the nasal cavity daily, it was always replaced in twenty-four hours. The tonsillar membrane did not recur after removal and the application of a solution of argent. nitr. (12 per cent.).

The false membrane in the nose ceased to form about the fifteenth day from the commencement of the attack, and was followed for a week or ten days by a muco-purulent discharge.

I should mention that there was no diphtheria in the neighbourhood at the time, nor did any member of the household—one of whom was a child—become infected. There was also no glandular enlargement, and the post-nasal space remained free of membrane.

Examined microscopically, the exudation consisted of a basement

membrane of fibrin, partly fibrillous and partly granular, with numerous leucocytes and some epithelial cells.

From the complete absence of any general symptoms, I regarded this case as one of croupous rhinitis, a disease first differentiated by Hartmann, in 1887 ("Deutsche Med. Wochenschrift"), when he recorded six cases, all in children. Since then a number of cases have been put on record by German and American writers, and a chapter is devoted to this affection in all recent text-books. As I have not observed any cases, so far, from an English source, I have brought this one before the Society in order to give the members an opportunity of expressing their opinions on a disease that at present occupies a somewhat doubtful position, both as regards its cause and its pathology.

Even the clinical picture of croupous rhinitis is by no means clear. Some describe it as a febrile affection throughout, and accompanied by marked constitutional disturbance; others, as non-febrile, and entirely local in its effects. Again, while Bosworth regards the fact that the membrane can be easily removed, and without hæmorrhage, as pathognomonic, Potter (JOURNAL OF LARYNGOLOGY, 1889) states that the membrane can only be removed with violence, leaving a bleeding surface. The duration of the disease, too, appears to vary within wide limits, extending from eight days to five weeks.

One of the most interesting points to notice is the frequent connection of croupous rhinitis with a follicular tonsillitis, or with true fibrinous deposit on the tonsils, conditions which are recognized to be often of septic origin, and sometimes hard to differentiate from diphtheria.

Croupous exudation in the nasal passages would probably be found to be not at all uncommon if all cases of acute rhinitis, especially in children, were carefully examined. Potter states it as his opinion that it occurs in two per cent. of such cases.

The PRESIDENT said he had not seen a case of the kind, and so far as he was aware, this was the first of the kind recorded in this country. He asked whether there was any suspicion of insanitary conditions in this case, and whether there had been any subsequent neuroses.

Dr. GRANT agreed that the case was quite new *apart from traumatic causes*. A somewhat similar condition sometimes followed the use of the galvano-cautery, and French writers called it *diphtérie de la plaie*. A chronic condition in a case under his notice occurred a few weeks ago, in which there was a constantly recurring deposition of membrane upon the conjunctiva, over the stump of an eye which had been removed. He had been requested to ascertain the condition of the nose, and he found, under the inferior turbinated bone, a white pultaceous membranous deposit just at the region where the duct opened.

Dr. WARDEN asked whether any bacillus was found on microscopic examination.

Dr. HUNT said it had not been examined for bacilli.

Dr. STEWART asked whether the urine was examined and whether any albumen was found. He never remembered to have seen a case like it.

Dr. HUNT, in reply, said that the patient was the wife of a doctor who believed the house to be in good sanitary condition. Moreover, there

were children in the house, and none of them had suffered before or since from any affection pointing to sanitary defects. There had been no subsequent neuroses. The case had been examined by her husband and by Dr. Campbell, of Liverpool, who at once said that whatever else it might be it was not diphtheria. This condition was, he admitted, seen after the use of the galvano-cautery, but then it never spread—at least, not that he knew of. Of course a possibly traumatic origin was his first supposition, but he had been unable to make out anything of the kind. Numerous micro-organisms were found in such membranous deposits, but nothing specific.

The urine had been examined before he saw the patient and was declared to be all right.

The PRESIDENT recalled a case reported by Dr. Reed, of Canterbury, in which a similar condition had been caused by the accidental entrance into the nostrils of the contents of a bottle of eau de Cologne.

Dr. HUNT said he had treated it at first as a local disorder.

PRESIDENTIAL ADDRESS:

A QUARTER OF A CENTURY'S RETROSPECT OF LARYNGOLOGY.

By LENNOX BROWNE, Esq., F.R.C.S.E.

THE first obligation of this chair is to tender my cordial thanks to the Fellows of this Association for electing me their president during the fourth year of its institution, and my next to justify my election, not only by a diligent performance of the duties attaching to the office, but, as has become the custom, to offer some remarks worthy of the consideration of the distinguished specialists over whom I have the honour to preside, and of those other eminent members of our profession generally whom I have the pleasure to see on this occasion.

It is now upwards of a quarter of a century since I first began to specially apply myself to laryngology, and I have thought that we might be usefully occupied this afternoon in taking a retrospect of the progress which that science has made during this period—a progress which has broken down all the barriers which were first raised against it, as the result of unreasoning and unreasonable prejudice, and also one which may encourage us to strive for still greater perfection in our work, and a still higher appreciation from without of our power to aid and supplement the noble aims of the general professors of medicine and surgery. At the time of which I speak (1865) the only hospital for special treatment of diseases of the throat was that in Golden Square, founded as a dispensary by Dr. Morell Mackenzie in 1863. Not for the purpose of amusement, but as a warning to those content with knowledge as it is, and as an encouragement to those who desire to advance it, we may usefully recall the abuse with which the birth of this institution was assailed, though in this respect it has never been in worse case than was, in its early days, the

Royal London Ophthalmic Hospital, founded in 1804,[1] and now admitted in spite of its special character, to occupy one of the highest positions amongst the charities of this metropolis. The *Lancet* even some years after its establishment spoke of this noble institution as an "infirmary shop for the reception of gulls," as an "ophthalmic warehouse," as "a shop for cutting out eyes," etc. In like manner the laryngoscope, when first introduced fifty years later by Garcia, was received with coldness, and, although his statements of the movements of the vocal cords in singing, as seen by the mirror, were never actually disputed, and were indeed, as we now all acknowledge, wonderfully accurate, they were received with distrust. Of this discreditable feeling we see an instance in the following passage by no less a person than Professor Merkel, of Leipzig, which in the present state of our information it is impossible to read without a smile :—"I have not yet, it is true, been able to obtain Garcia's original "observations and do not know, therefore, how he proceeded in these "alleged experiments, what he has seen and what he has not seen; "but I have just grounds to doubt the reality of his observations until I "am informed in what manner Garcia has prevented the mirror from "becoming dimmed, and how he draws forward the epiglottis, which to "a great extent hides the glottis from the eye," etc.[2]

Even after Czermak had, in the course of his tour throughout Europe in 1859-60, demonstrated to conviction the groundlessness of the prejudice against the laryngoscope and the ease of its general employment, the mirror was denominated by the *Medical Times and Gazette* "a physiological toy of no manner of use in the treatment of disease," while the idea of a hospital where its daily employment would be made a special feature was ridiculed as the acme of quackery.

How different are things now. In 1865 less than 3000 represented the whole number of hospital patients of the City of London treated with the aid of the laryngoscope, and there was but one institution where it was used; to-day, on a moderate computation, there are close on 30,000 patients, of whom at least half are treated in special throat hospitals, and there is hardly a general hospital to which a medical school is attached that does not boast a special department for diseases of the throat, though it cannot be denied that while at a few of these the work is done excellently,[3] at several, advertisement of the existence of this and other special clinical features is even still only in the nature of an educational sop to the parental Cerberus.

Two instances illustrative of this last contention occur to me in relation to the special throat and ear departments of two hospitals, which were the

[1] Bransby Cooper, in his *Life of Sir Astley Cooper*, informs us that this Hospital was first established as an Infirmary for the Eye and Ear by Saunders, Demonstrator of Anatomy at St. Thomas's Hospital, with the assistance of Dr. Farre. Sir Astley (then Mr.) Cooper was one of the Committee of Management, the first Chairman being Benjamin Travers, father of the Surgeon. Saunders died early, and Cooper often performed the operations at the Infirmary.

[2] "Anthropophonik," Leipzig, 1857, p. 608.

[3] In an interesting address on the future of laryngology delivered at Leeds in 1889, Mr. Butlin stated that when a special department for diseases of the larynx was started at St. Bartholomew's in January, 1881, "there were only two or three lamps, scarcely any students in attendance, and there were no regular dressers. The number of dressers has been regularly increasing and at the present time," he says, "I pass more than fifty men through a three months' course of dressing every year. The number of days on which the patients are seen is two, in place of one each week, the number of lamps is *nine in place of two*."

earliest to establish them. At one a man was admitted with syphilitic laryngitis; tracheotomy was performed, the tube removed after ten weeks, and the patient discharged without a single laryngoscopic examination being made either before or after the operation; at a later date and in a special hospital, the mirror revealing cicatricial stenosis of serious degree, the tube had to be re-inserted and retained for life. At another, the departments were in charge of a young general assistant-surgeon, who frankly told me that if he was on house duty he could not bother to brush a relaxed uvula or syringe an ear, when a good case of hernia or fracture claimed his attention, the minor diseases presented by such operations appearing to embrace for him the limits of interest in the specialties.

As I boldly stated two or three years ago at a debate raised against special hospitals by the Hospitals Association, there is hardly a laryngologist in charge of a throat department of a general hospital who is not indebted directly to the Throat Hospital for the education which entitled him to that post, and my personal obligation to that institution for the benefits I received in the course of an apprenticeship of seven years will, I trust, never be forgotten by me. The Central London Throat and Ear Hospital, which has been established nearly eighteen years, can make no claim to education of metropolitan specialists, but we have had a goodly number of pupils now doing excellent work in the Provinces and the Colonies, and the United States. Many of the "dressers" from special departments come to us when qualified to practice as clinical assistants, and the applications for such appointments are now in excess of the vacancies. Facts such as these, and they could be easily multiplied, should be sufficient to silence all objectors, and I would fain pass on to matter less polemical were it not that our detractors have entirely shifted their ground, and now declare that special departments being so general, there is no longer occasion for special hospitals, notwithstanding the existence of overwhelming evidence to prove that had not the latter been established, the benefits of the former would even yet be in the womb of futurity. Moreover, we still hear the cry that local treatment is abused and that the ignoring of general constitutional causes and of general treatment of throat diseases is an essential of the laryngologist who is attached to a special hospital, though we rarely or ever hear it said of the general surgeon boasting of a special department. I doubt if this charge were ever justifiable; certainly it was not in the generality of its application to all throat specialists, nor to the invidious selection of this particular section of them.

It would not be difficult, as Dr. Weir Mitchell has recently remarked, to show that much more frequently the fault is with the generalist who ignoring or misinterpreting the original and possibly local source of a symptom, wrongly and ineffectively treats the patient by drugs for something which is easily recognized and promptly curable by the surgeon specialist.

But admitting for the sake of argument, to still quote this same eminent American physician, "that limitation of attention to par-
"ticular organs is apt to lead to a too entire trust in local means,

" and to neglect of those patient methods which ought more frequently " to call for the added counsel of the general physician," I would claim that such a charge could with more force of directness—though probably with no more fairness—be urged against either the ophthalmist or the aurist, each of whom is often enabled to treat errors of refraction or audition by purely mechanical and local measures. But the cases of disease of the throat that can be so regarded are comparatively few, and I have ever urged this fact in my writings and my daily clinical teachings. One of the latest fads of the general physician is to ascribe impairment of the senses of sight, hearing and smell, of speech, and for all I know, most other disorders of function, to neurasthenia, and to assert that numbers of these cases get well without treatment. But I think I shall be in agreement with most of my hearers when I contend that no one is in a position to make such sweeping statements unless he is an expert in the respective technical methods of examination, and has exhausted every special means of diagnosis. Needless to say that this neurasthenic theory is one of great comfort to the ill-informed, and constitutes a readily wielded weapon against the specialist, but in truth it only represents in more pretentious form the advice of past times that children would " grow out " of enlarged tonsils, or that a suppurative discharge of the ear should not be " interfered " with.

Mr. Butlin, in the address already alluded to, has well said that " from the point of view of its importance to the general public, " laryngology stands second to none of the specialties, gynæcology " alone excepted, while it is far superior in importance to some," against which, I would add, much less objection has been taken. The reason of this importance of laryngology to the general public is, of course, because of its far-reaching influence on the general health—a point that does not require much further insistence at this date nor before my present audience. Suffice it to say that, whereas the ophthalmoscope is chiefly of use beyond its local sphere, in detection of cerebral and renal disease, there is hardly a general disease on which light may not be thrown by an intelligent application of the laryngoscope, nor is there a single specialty whose diagnostic and therapeutic utility may not be aided by our investigations. Amongst the latest and still largely unrecognized examples of this fact are the many diseases of the eye which may be relieved by means of treatment of causative conditions existing in the throat or nose. Above all, there is no technical instrument amongst the whole armamentaria of the surgeon which, having accurately detected the site and nature of a local disease, is so useful, and indeed so essential, to effective treatment ; and, finally, I challenge contradiction of the statement that all the best work in laryngology, as in all other special branches, has been done, not by the generalist who flirts with it, but by the specialist who, being well grounded in general principles, devotes his whole life to it.

A good idea of the advances made in laryngology may be gained by comparing (as I have been recently privileged to do) the earlier medical reports of the Throat Hospital with those of later date. During the first six years the special claims of the hospital were urged by the printing of

a list of about twenty diseases, which included all the faucial, pharyngeal, post-nasal, laryngeal, œsophageal, and external maladies of the throat that presented themselves. This list was in 1869 extended to forty, but it was not until 1875 that a thorough attempt at registration was made. The diseases were then tabulated under ten heads, with a sub-table for each region — namely, the pharynx, larynx, trachea, nares, mouth, tongue, œsophagus, neck, chest, and ear, and the total varieties in the sub-tables numbered about seventy. The classification of the Central Throat and Ear Hospital is in the main similar, though our list of separate diseases is more extended, because we classify with more detail diseases affecting the ear, of which we treat a much larger number.

Some other very curious facts illustrating the advance of our science are to be deduced from comparisons of the tables of these two hospitals for the last seven years, which have each been privileged to treat in that period about an equal number of patients—45,000.[1]

First amongst these facts is the evidence of the more careful recognition of the importance of disease of the nares as a primary factor in the causation of diseases of the larynx. Thus, at Golden Square, in 1884, diseases of the nares numbered 212 out of a total of 5701 patients, and in 1891, 760 out of a total of 6855 patients—representing a percentage of 3·73, and 11·1 respectively. In 1889, indeed, the number was as high as 986 out of 6516, or over 15 per cent.

At the Central Hospital, the evolutionary changes in this direction are even more remarkable, for from 105 cases of diseases of the nasal fossæ in 1884, out of a total of 5014 patients, we find noted 1834 out of 6675 in 1891. In other words, recognition of diseases of the nasal fossæ—and these, be it remarked, not including adenoid growths or other affections of the naso-pharynx—has risen from a ratio of 2·09 per cent. in 1874 to 27·47 per cent. in 1891. I do not think I am called upon to defend the difference in these figures, perhaps not even to explain it, though speaking for myself, and I believe I might say for my colleagues, since I have now under my personal care but one-sixth of all the cases annually treated, I can ascribe the change mainly to the enthusiasm aroused in our staff by the visit and brilliant demonstrations at our hospital of Holbrook Curtis, of New York, in 1887, and later, to the teachings of Bosworth as set forth in the later edition of his classical work.[2] As to the first, while we had but one case of deviation of the nasal septum submitted to operation in 1886, we had 17 in 1887 (the year of Curtis's visit), 104 in 1888, and 214 in 1891. It is somewhat curious to observe that at Golden Square, at least so far as the practice is revealed in the statistical tables, deviations of the septum are almost ignored, for while I find 6 recorded in 1885, and 18 in 1886, they are altogether conspicuously absent from the tables of the out-patients for the following three years, and but 16 were treated in the wards in 1890 out of a total of 519 in-patients, against 23 at the Central out of 228 in-patients.

Again, after the publication of Bosworth's volume in which he regards

[1] These figures pertain to the out-patients only, because, while the in-patients may vary in number, it may be taken for granted that this latter class have, previous to admission to the wards attended in the out-patient department.

[2] "Diseases of the Nose and Naso-Pharynx," Second Edition, Vol. I. New York, 1889.

chronic laryngitis, tracheitis, and bronchitis "as almost invariably secondary affections to disease of the nasal passages,"[1] we began to observe the nose more carefully, and in the main truth of Bosworth's conclusions we have been able to concur, even though we have been obliged to discount to some extent this and other of his statements by an allowance for the personal equation of his high enthusiasm. As further instance, both of the acuteness of the observation and of the necessity for somewhat qualifying its dogmatism, take Bosworth's opinion that a deformity of the nasal septum, giving rise to nasal stenosis, is "by far the most frequent cause of hypertrophic rhinitis."[2] Indeed, he told us at Birmingham and Berlin in 1890, that he believes a septal spur or deviation to be an *invariable* accompaniment of this disease.

During the year 1890 it was agreed with my colleagues that the record of every case of hypertrophic rhinitis should be notified on this point, and we found that out of a total of 1133 cases of sub-acute and chronic hypertrophic rhinitis a spur or deviation of what might be called surgical importance was present in 988 cases, or 87·2 per cent., and in only 145, or 12·7 per cent., was it absent. Of the general correctness of Bosworth's views a further corroboration is given in the circumstance that since their recognition the majority of acute, sub-acute, and chronic laryngeal diseases are only to be treated satisfactorily, and may often be treated solely, by direction of our therapeutics to the primarily offending region of the nose.

I am well aware that there were other workers of great originality in nasal diseases before Bosworth, of whom we cannot forget Voltolini, of Breslau, whom we had the honour to number amongst our honorary Fellows, and Hack, of Freiburg, but I contend that no one has done more to give practical effect to the importance of diseases of the nose, as causative factors of those in the throat, larynx, and respiratory organs generally, than our American *confrère*, to whose researches I have at some length referred. For think how barren was our knowledge, how tedious was our former treatment, and how merely temporary our alleviations of inflammations and functional and reflex neuroses of the upper respiratory passages until this interpretation was offered to us! Nevertheless, rhinology, being the most recent departure, has at this moment the honour of being the best abused specialty.

I was speaking just now of the "personal equation" in all observers possessed of enthusiasm. I observe 58 cases of "ethmoiditis necrotica" in the report of the Throat Hospital for 1886. With a change of staff this disease disappears from the nosology of that institution, nor is it to be found at the Central. But at this last-named hospital, where I work, varix of the throat and lymphoid hypertrophy at the base of the tongue —a condition whose importance I was, I believe, the first to urge—was noted only 31 times in the report for 1885, but 369 in that for 1891, my colleagues agreeing with me in considering it a pathological entity worthy of treatment. It is absent altogether from the tables of Golden Square.

The foregoing has been inserted as an antithetic parenthesis, but,

[1] "Diseases of the Nose and Naso-Pharynx," Second Edition, Vol. I. New York, 1889

[2] *Loc. cit.*, p. 124.

independently of that, I have so far alluded only to diseases of the nasal fossæ. These act injuriously—first, by causing nasal stenosis and enforced mouth-breathings; secondly, by departures from the normal consistence and quantity of the nasal secretion, and, thirdly, by a consequent catarrh of the naso-pharyngeal and laryngeal passages.

We have, further, to remember how much greater importance is given now than formerly to the circumstance that a very considerable number of diseases of the upper air-passages, especially those of children, depend on mouth-breathing due to the presence of adenoids. Although it is upwards of fifteen years since William Meyer, of Copenhagen, brought this subject under our notice, and illustrated its importance by the relation of over 100 cases in his own practice, it has not received its fair share of attention until the last ten, or even, I might say, the last seven or eight, years. Thus at the Throat Hospital in Golden Square the percentage of adenoids in 1885 to all cases admitted was 0·7 per cent.; it rose in 1891 to 2·75 per cent. To these figures should probably be added a considerable proportion of the cases of enlarged tonsils in which adenoids co-existed, for experience of the last few years assures me that, while there may frequently be enlargement of the pharyngeal tonsil constituting adenoids without hypertrophy of the faucial tonsils, it is but rarely that this last condition is found in children without corresponding adenoid overgrowth. At my own hospital, where possibly we are more surgical, our tables show a much more startling increase, the numbers in 1884 representing a percentage on all cases admitted of 0·44 per cent., and in 1889 of over 5 per cent. Since that year we have tabulated adenoid hypertrophy as a separate disease, whether it existed in association with ordinary tonsillar hypertrophy or not, and the numbers in our report for 1891 give 621 cases of adenoids out of a total of 6675, an average of over 9 per cent.

Of the far-reaching influence of this condition much interesting evidence has been afforded. One of our Fellows, Dr. Farquhar Matheson, has pointed out the etiological relation of adenoids to stammering, and of the correctness of his views I have no doubt; not that I have been able to satisfy myself that mere removal of the adenoids without after-education will of itself cure the stammering, but, on the other hand, I have seen many cases in which education was fruitless until these physical obstructions to a correct action of the muscles of articulation had been recognized and eradicated. I have myself been able to adduce two cases illustrative of the importance of adenoids as a possible predisponent to the actual formation of laryngeal papillomata in children, or at least of their recurrence. I have also convinced myself of the relation of these glandular hypertrophies to laryngismus stridulus, a proposition disputed when I first enunciated it, but since confirmed by my friend, Dr. Kendal Franks, another Fellow of our Association, and by other independent observers.

Fain would I occupy myself, did I not fear to weary you, with other interesting examples of our progress, but I must limit my remarks and your patience to the consideration of only two or three other points. Chief amongst these would I note the great aid laryngology has been to general

medicine in its power, first to observe with the eye the earliest stages of tuberculosis of the respiratory organs, and, secondly, in the encouragement given by the successful attempts to heal tuberculous ulcers of Heryng of Warsaw, Krause of Berlin, and Gouguenheim of Paris. These results are of importance, not only to laryngologists, but to all who have to treat tubercle wherever situated. The cure of a case which I exhibited at the Medical Society five years ago, of pharyngeal and laryngeal tuberculous ulceration by scraping and application of lactic acid was an encouragement to a friend to try the same treatment in a patient suffering from a similar condition in the rectum. The beneficial effect of menthol in tuberculosis of the larynx has led to its successful application to the more remote trachea and bronchi. This drug, as also cocaine and codeia locally applied, has largely diminished the terrific agony and torture so characteristic of this distressing disease. Fully twenty years ago, I was meeting Dr. Walshe in a case of laryngeal phthisis, and making mention of one or two drugs employed in those days as local anodynes, that distinguished physician remarked that if the topical treatment could really achieve what I, even at that date, ventured to claim for it, it would do more than anything else to justify the position taken by throat specialists. I would not mention this conversation without asking permission of Dr. Walshe, who in reply to my request has kindly written to me under date of November 14th, 1891:—

"I have always thought and often given expression to the thought, that among the therapeutical achievements most to be desired in the range of respiratory disease ranks the removal, or even the notable alleviation, of the pain and other tortures attending 'laryngeal phthisis.' I can, therefore, have no doubt that I may have used the *ipsissima verba*, which your excellent memory serves to recall after a lapse of twenty years."

I have not time to allude at length to the many important and radical changes which the investigating apparatus and therapeutics, both medical and manipulative, of throat diseases have undergone in the last twenty-five years. Some of them have been already hinted at; but I might be misunderstood if, in speaking of tuberculosis, I omitted all mention of its treatment by tuberculin. It is now the fashion to condemn this product as altogether worthless, and to ridicule the enthusiasm of those who took a pilgrimage in 1890 to Berlin, in order to witness the new treatment as pursued with the unanimous approval of the many eminent physicians and surgeons of that great medical centre. For myself I shall never feel ashamed that I was one of the pilgrims, and, at least, I was in distinguished company; nor will I be so uncharitable as to retort too severely on those who, then lacking and now condemning the enthusiasm to study the subject on the spot, were not above supplicating us to obtain for them a few drops of the magical fluid.

The more careful study of tuberculosis and its relations to lupus and leprosy, which the movement stimulated, might of itself atone largely for the disappointment of promises of as easily attained a cure as (the wish being father to the thought) was too readily assumed, and the reaction—to employ an appropriate word—against the treatment and its great promoter, is to the full as unreasonable. In common with almost every other practitioner who has had any experience of tuberculin, I may say that

while I have had to record a most discouraging list of failures of the remedy to give more than symptomatic and very temporary relief, I am happy to report one case of cure, by its means, of true tuberculosis, the diagnosis of which was established by the presence of tubercle bacilli in the sputum, and the physical examination of Dr. Dawson Williams in this country, and of Professor Gerhardt and his accomplished assistants in Berlin. Added to this I can report at least one case of cure of lupus, and many instances of the diagnostic value of the fluid. The chemical researches of Dr. Hunter and other English workers, and the industrious perseverance in their clinical application by Mr. Watson Cheyne, lead us to hope that out of evil may yet come good, and that even if Koch be not awarded the full glory of achievement, at least to him will redound the honour of initial discovery.

There is another important respect in which laryngology, in common with, and possibly in no greater degree than, other specialties, has been advanced in usefulness in the last few years, namely in the more accurate and expeditious use of the microscope. When I first commenced practice I, in the haste and irreverence of youth, used to say that by the time a specimen was in a condition to be sectionized, and the various members of a microscopical committee had agreed on a report, the patient was either dead or cured. But all this is changed, and we can now learn the characteristics of a sputum or the nature of a growth almost before the patient leaves our consulting room, or is removed from the operating table. I have not the least doubt that the emulation of young histologists in this direction was largely stimulated by the exhortation of Sir James Paget some years ago, that it should be the rule to examine each morbid growth or product, not only after it has been prepared by repeated staining or other like process, but also "*directly after its removal from the living body, while it may be deemed still alive.*"

To quote two striking instances in my own practice, I had recently the honour of reading a case to you of a laryngeal growth, which, to the naked eye, would be considered a typical papilloma, but, on minute examination by Mr. Wingrave, proved to be an angioma. It is possible, and even probable, that, without unduly straining the lesson to be learned from a single example, the rupture of a varicosed or distended vessel in a hyperæmic vocal cord may be the original source of local irritation and consequent development of a warty growth in more cases than has hitherto been suspected ; but this would be difficult of proof, except where, as in my case, the whole neoplasm was removed intact.

Recently, again, I was enabled, as the result of an examination of a specimen of hæmorrhagic sputum, to confirm definitely the diagnosis of a gumma pressing on the right bronchus, near the bifurcation, and this in spite of several symptoms which might have pointed to the existence of a pulmonary lesion, a malignant growth, or an aneurism. Later examinations very prettily corroborated the subjective evidences of improvement.

We must not, however, assume that we have yet by any means arrived at a stage of histological perfection. A case, familiar to many of us in London, constantly occurs to my mind, where the history subsequent to a partial laryngectomy has most happily belied the inevitable prognosis, as

foreshadowed by the histological report of the removed growth. And yet again, there is the excellent case related by our Secretary, Mr. Stoker, in which, I am sure, he will agree with me, the clinical history of a laryngeal growth hardly prepared him to anticipate the malignant character of its structure, as determined by irrefragable microscopic examination after endo-laryngeal removal.

In both these instances the whole of the morbid structure was at the command of the observers, and there could therefore be no fallacy on account of insufficient material or incomplete data, but I need hardly remind you that in ours, as in every branch of surgery, the histological evidence of a fragment, useful as it often is, may sometimes lead to an erroneous diagnosis, with a consequently faulty prognosis.

Bacteriology, like its elder science sister histology, has been invaluable to us, and, in its bounteously productive youth, gives promise of still richer harvests. This section of bacteriology, in its application to general medicine, was one of the most attractive at the International Medical Congress, at Berlin, of 1890, and absolutely took the palm of interest at the Hygienic Congress held in this city last August. Nor can any of us forget the brilliant demonstration of the science in relation to the diseases of our specialty given us in the past session by our much esteemed colleague, Dr. Macintyre. Suffice it here to mention its superlative importance in doubtful cases of phthisis, and the discovery—each day receiving fuller confirmation—of a bacillus of diphtheria, in addition to those already recognized of lupus, leprosy, and ozæna.

Having offered you a few of the more pregnant thoughts suggested by my memories of the past, and also, as I hope, shown you by the light of those memories that laryngology is a science improving with its growth, I would venture to enforce the moral of this retrospect by quoting the eloquent words of Sir James Paget, delivered on a similar occasion.[1] "Let us never be content with present utility. Glad of it we may well be, and even proud, for science cannot be degraded by being useful in good things . . . but we must not be content with it as it is; it will be increased by every increase of our real knowledge . . . which brings before us a larger and clearer view of the immeasurable quantity which is still to be gained. The more we know the more we can see, if we will, how much more there is that we do not know . . . Where, then, are we to stop? I do not know more than this—that we must not stop where we are; we must go on and on, and we may be sure that they who work to find the truth will not work in vain—sure that with true work true good will come." Thanking you, gentlemen, for your patient forbearance, I will, with our great surgeon orator, hope that it may be so in this Association during my presidency.

Dr. WARDEN proposed a vote of thanks to their President for his admirable address. He said there could be no doubt at present as to the success of the laryngoscope, and he avowed himself one of those who believed that the greatest amount of good came from specialism in each

[1] "The Future of Pathology," 1888. *Brit. Med. Journ.*, Vol. I., p. 144.

department. It had been the fashion to ignore and ridicule all specialism, but he thought that at present the profession were getting more and more fully aware that the specialist was the pioneer of science in his department.

This was seconded by Dr. SANDFORD, and agreed to by acclamation.

Discussion on *Deflections of the Nasal Septum* was opened by Mr. MAYO COLLIER, who said :—

Mr. President and Gentlemen,—Last time I had the honour of bringing a communication before this Society it was on the subject of the tonsils. You were then good enough to intimate your approval. The only fault, sir, that you found was that my remarks were too few—a fault, I feel sure, I shall not commit on this occasion, if indeed I do not overstep the bounds and sin in the opposite direction.

Emboldened, then, by your generous approval I have again dared to appear before you.

Since then I have not gone backwards—on the contrary, I have progressed—my thoughts have soared in higher regions, and, being ever-mindful of the proverb, "*Medio tutissimus ibis*," I have selected the nasal septum as the subject of my communication to-day.

Now for a definition.

By deflections of the nasal septum I mean all bulgings of the inner party wall of the nasal fossæ having corresponding concavities on the opposite side.

By this definition, you see, I exclude all ridges, spurs, exostoses *et omne hoc genus*, although they are incidentally alluded to, and their presence is, I think, satisfactorily explained, in the course of my remarks.

It is the custom of logicians, and indeed with them is a hard and fast rule, amounting to a law, a law as unalterable and as stringent in its application as the far-famed laws of the Medes and Persians, whenever an investigation is set on foot to inquire into the cause or causes of any effect, to supplement the main question, or, as at the outset I should prefer to say, to subdivide the main question into two primary ones.

These are technically known as and termed the An Sit and Cur Sit.

Now, sir, the An Sit, or "Is it so?" or, more freely rendered, "Is it a fact that so and so, as reported, is so?" must always precede the Cur Sit, or "Why is it so?" because if we cannot prove the An Sit the investigation of the Cur Sit falls to the ground.

Proceeding, then, on strictly logical principles, I propose to deal with my subject, namely, "The Causation of Deflections of the Nasal Septum," by asking myself, firstly, the question--An Sit, *is it a fact* that nasal deflections exist to a sufficient extent to make it worth while for us to devote our serious attention to investigating the causes of their existence? or, in other words, do they amount to a sufficient number to constitute a normal abnormality?

Well, gentlemen, anticipating what I shall most indisputably prove later on, this An Sit can be answered in the affirmative, and I shall show and conclusively prove that some deflection of the nasal septum is nearly as common as a nasal septum.

Secondly, we come to the Cur Sit, or "Why is it so?" and we immediately see that the Cur Sit becomes of importance only and just in proportion as we are able to establish the generality of the An Sit; or, in other words, the indisputable and almost general existence of the fact. Sir, I am a thought-reader, and can read what is now passing in your minds. It is this: What on earth has all this got to do with the subject? Who does not know that deflections of the septum are as common as blackberries? Why cannot he get on with his subject?

My answer is, Wait a bit; don't be impatient. I say you must always establish your An Sit; aye, and re-establish it on every occasion before you can argue your Cur Sit. More than this, I say that everyone does not know or does not recognize how frequent are deflections of the septum, and, consequently, does not recognize their consequences. Works on general medicine and surgery ignore the fact, and it behoves us, as the pioneers and guardians of this particular department of medicine, to make assurance doubly sure, and to advertise the fact on every possible occasion.

Now, sir, as this is the first time since the foundation of this Society that the subject of the nose and its diseases has come before you, I take this opportunity, and it appears to me a very proper proceeding, and I trust it recommends itself to you also, to say a few words on introducing this subject. It cannot be unknown to you, after what has fallen from the President in his eloquent address, even if you were ignorant on this subject before, that the nose and those who practice its diseases are not, if I may say so, in good odour with the general body of the profession. I am a general surgeon, attached to a general hospital, but taking a very great interest in this department of surgery, pardon me if I am a little jealous of its honour. I would suggest to you that it is your duty to listen and note what is said. It is our duty, as the British Laryngological and Rhinological Association, to alter this if we can. Why, you banded yourselves just four years ago into this Association, and what for? To advance the science of laryngology and rhinology, and by implication to protect and uphold the good name and calling not only of the Associates, but of all those whose practice is concerned with these diseases. In the face of this, are you aware that there be those in the ranks of our profession, aye, and in the tents also, and their number, I regret to say, is not a few, who intimate, if they do not say so in as many words, that nose specialists are nothing better than charlatans, quacks, and rogues; that they foster, nurture, and keep in darkness the nose and its diseases, as they would the goose that laid them golden eggs; and, moreover, if anything more be wanting to complete this pretty picture, that they live, thrive, and grow fat upon the credulity and ignorance of their fellow creatures.

I say to you, "Blame them not, but rather educate them, educate them with fact not fancies, feed their minds with the result of your honest work, proved and reproved, not self-contained assertions, self-contained in the sense that they bear the stamp or *ipse dixit* alone of some individual who may happen to make a good thing out of tinkering at and tampering with the nose."

I say do this and they will soon be converted and will turn round and bless, respect, and honour you.

Apropos of the necessity of catching your hare before you can cook it, or establishing your An Sit first on every occasion, a story is told in connection with a body of men whom you will be inclined to agree with me are not the least intelligent of our fellow creatures. I allude to the Fellows of the Royal Society.

The question under discussion was the reason why a globe of water with a live fish in it weighed less than the same globe of water without the fish.

Some said they would give it up and playfully requested to be asked another, but there were others who rather fancied themselves and set to work and wrote papers in explanation of the fact.

One explanation that particularly "fetched" the Society, was that the fish yielding to his characteristic propensities, drank a great deal of the water, condensed the same in his tissues, and then on being withdrawn from the public gaze—as you would say—made water.

Well, sir, the President, who even on that occasion was no less a personage than a king—King James the First, I believe—had his royal doubts on the subject, and on the matter being put to the proof by a pair of scales, lo! and behold it was not so. These worthy gentlemen had been talking nonsense. They had put the cart before the horse.

Now, gentlemen, it was in order to save you the infliction of sitting there and listening to more than the ordinary amount of nonsense that I was careful to put my horse before my cart, and, whenever I do start, to place something before you with some little "go" in it.

You will see by the synopsis that I next propose to deal with the anatomy of the septum, cartilages, and muscles of the nose. In doing so I wish to direct your attention to several well-known but unrecognized facts, and to divest you of several current but erroneous notions. In the first place the septum nasi is not a firm, stiff and solid partition between the nasal cavities limited by a fixed and immovable framework of bone. On the contrary, the septum is an extremely thin translucent elastic partition not designed to give support to the bones of the face and skull, but to act as a delicate support for mucous membrane and important structures contained therein.

I would remind you that the septum nasi is frequently entirely absent without producing any serious consequences to the shape of the face or head, and, moreover, may be destroyed in part, or to a considerable extent, by disease, without even altering the external appearance of the nose.

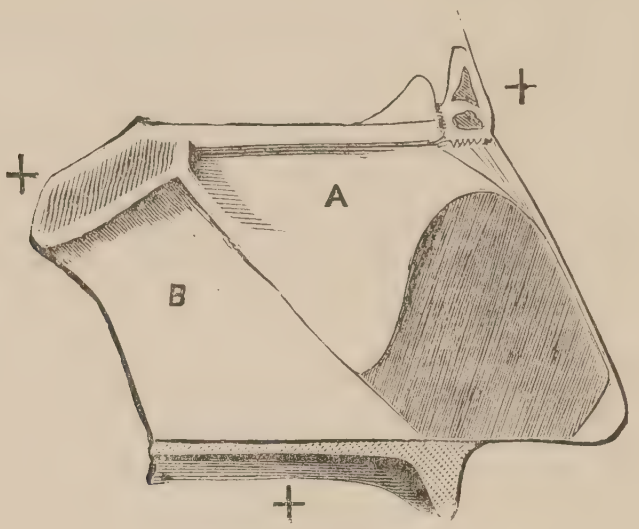
The septum is not fixed in an immovable framework of bone, it is supported at three points only, and in the rest of its extent it is practically free.

You will see from this, and other peculiarities that I shall immediately point out, how easily a force acting in a direction at right angles to the septum can bulge a partition so thin, so unsupported, and so naturally prone to displacements. On glancing at the diagram you will see that the septum is an irregular hexagon, but for all practical purposes may be

considered as a quadrilateral, and, further, taking an average of a great number, may be measured as a square whose sides are three inches long, giving a superficial area of nine square inches.

The importance of this measurement will become apparent presently.

The septum is composed practically of two bones and one cartilage—the vomer perpendicular plate of the ethmoid, and the triangular cartilage of the nose.



Septum of the Nose.
A. Ethmoid; B. Vomer.

Now in reference to each of these factors we find that the relative proportions are subject to variations. The perpendicular plate of the ethmoid may be very thin, especially posteriorly, and may not extend further forwards than the frontal spine, or on the contrary may be thick, especially anteriorly, and end in front in a regular prow. The variations in the vomer chiefly affect its anterior half, the inclination of its posterior border, and its forward attachment to the superior maxillary bone.

The posterior border may be almost vertical or inclined at an angle of 45°. Moreover, it is frequently deeply grooved, indicating its development from two distinct plates. The anterior half is frequently cancellous, extremely thin, and often presents a separation between its two plates. It may extend as far forwards as the anterior nasal spine, or fall short of this by an inch.

The triangular cartilage is also the subject of frequent variations. It is usually very thin and quite translucent in the centre, and here sometimes deficient also. It is much thicker at its margins than at its centre. Its anterior margin is thickest above, where it fits into the groove of the nasal bones. Its superior posterior border fits into the groove on the anterior border of the perpendicular plate of the ethmoid bone.

Its inferior border is thin posteriorly where it fits into the groove formed by the separation of the plates of the vomer, but is thicker in front where it articulates with the crest of the superior maxillary bone and joins the column of the nose. Its chief variations affect its extent forwards and upwards, and its degree of attachment to the superior maxillary bone.

Taking the septum as a whole, it is most important for our purposes to note that it is the anterior and central segment that is the thinnest, and

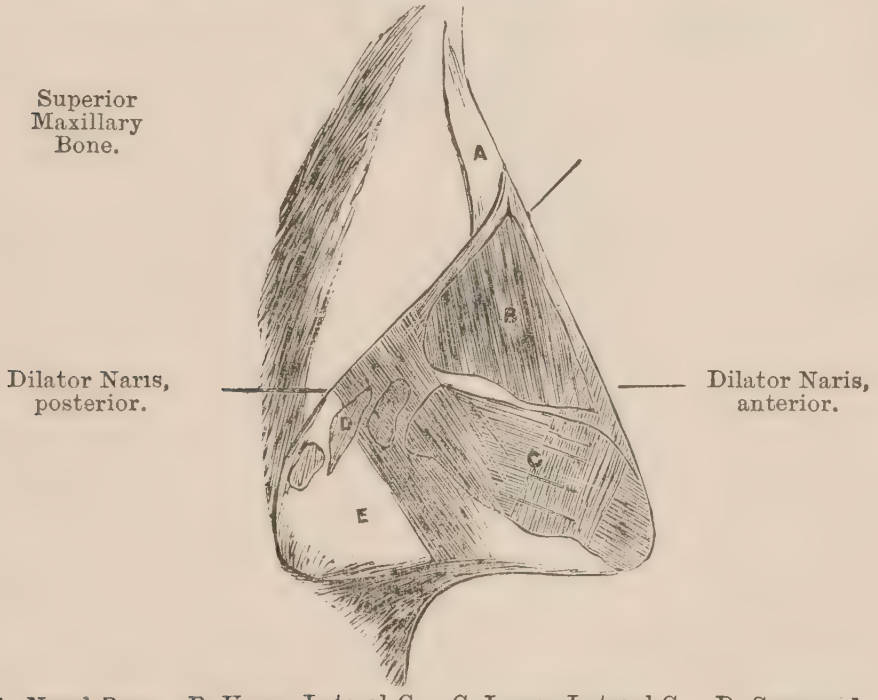
to recognize how extremely thin this part is in the normal state. The posterior and upper part of the septum maintains a fairly uniform degree of consistency.

Now, please note it is exactly where the septum is thinnest that deflections are, and where it is thickest that deflections are not. No man, woman, or child ever saw a deflection of the posterior half of the vomer. Next, ossification in the plates of the vomer and ethmoid commences very early, a single centre appearing about the third month for the ethmoid and two for the vomer.

At birth, cartilage still exists between the two plates of the vomer, and between the anterior border of the vomer and ethmoid; indeed, it is recorded that cartilage, even in adult life, may exist between the vomer and ethmoid as well as between the plates of the vomer.

The most common variation of the septum as a whole is its more or less complete absence; most frequently, however, portions of the vomer, ethmoid and cartilage are present.

The only other variation I have been able to find is one recorded by Leffers, in the *Philadelphia Medical News* of Jan. 7th, 1882, and quoted by Sir Morell Mackenzie. Here the septum was partly duplicated, and in the author's exact words: "The upper half of the posterior edge of the "partition was divided into two distinct portions, large enough to admit "a lead pencil." Of course this was due to arrest of development, or non-union of the separate halves of the vomer.



A. Nasal Bone; B. Upper Lateral C.; C. Lower Lateral C.; D. Sesamoid; E. Cellular Tissue.

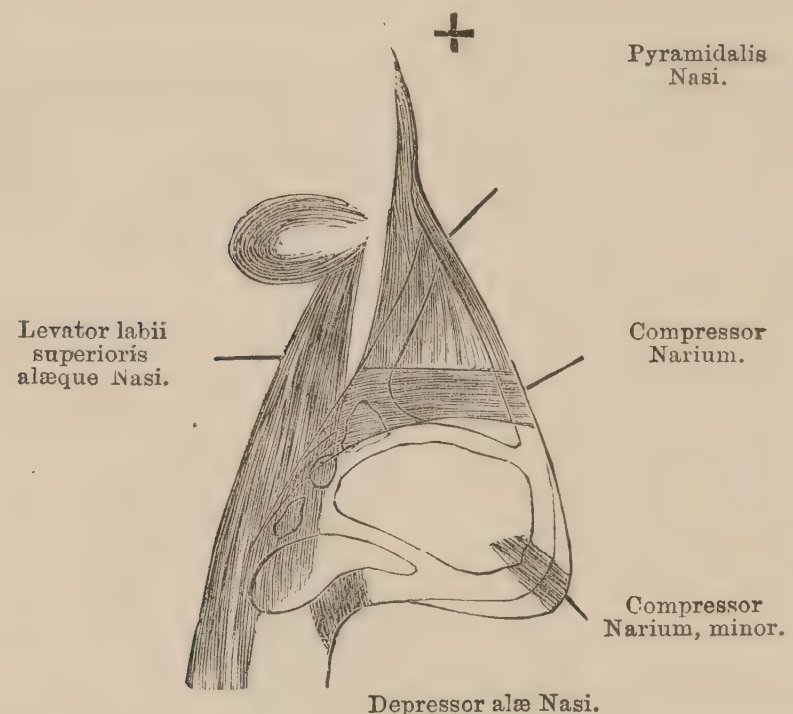
We pass now to not the least important part of our subject, namely, the cartilages and muscles of the nose. Now, I am going to make this to you extraordinary statement, and, moreover, I am prepared to prove that to paralysis or paresis of these muscles an enormous number of deflections of the nasal septum are due.

As you will see by the diagram, the nostril is a valve which, without

living structures to regulate and preside over the opening, would admit the passage of air only in one direction, namely, in expiration. Proof of this is afforded in deep chloroform or other narcosis, some cases of hemiplegia, lesions of the facial nerves, and other states. The cartilages of the nose are so arranged as to afford rigidity with elasticity, and are disposed in the manner indicated as illustrated on the diagram. They are the upper lateral, the lower lateral, and sesamoid cartilages, the remaining portions of the alæ of the nose consisting of fat and fibrous tissue.

These cartilages are acted upon and regulated by a double set of muscles, comparable to the intercostal muscles in so far as they run between cartilage and bone, are connected with the respiratory function, and are brought into play separately according as inspiration or expiration is dominant.

These muscles are seven in number, and are divided into two sets—



the dilators and constrictors ; and the dilators again into ordinary and extraordinary. The ordinary dilators are the dilator naris posterior and the dilator naris anterior. The reserve or extraordinary muscles are the pyramidalis nasi and levator labii superioris alæque nasi, no insignificant or feeble structures. The compressors or constrictors are feebly represented by the compressor nasi, and the compressor narium minor and depressor alæ nasi. The actions of these muscles are indicated by their names, but it would be as well to observe how great is the difference in the power of the muscles that open or dilate the valve as compared with those that close it.

Now, sir, for statistics in proof of the An Sit. Some years ago, when first reading this subject, I recognized, as others have done, that statistics as to the number or proportions of deflections in the dried state were really of not so much value in view of the fact that nine out of every ten

deflections affected the cartilage of the septum and the portions of bone in its immediate neighbourhood.

I then set to work to examine every person who presented himself at my out-patient practice at the Hospital, as well as those in private practice that I decently could, in order to find a perfectly normal septum, with much the same result that Diogenes had when trying to find a truthful man.

I am enabled to make this general statement after examining over 1000 living septa, to say that some deflection or other irregularity of the septum is within 10 per cent. a constant feature of adult life, and it is only in young persons under puberty where we may expect to find a majority of normal septa.

First and foremost, always *facile princeps*, come the observations of our much respected late president, Sir Morell Mackenzie. He examined 2152 dried skulls, and found 1657, or 76·9 per cent. had deflections or other irregularities in nearly equal proportions on both sides ; please note! Also in nearly 10 per cent. deflections existed on both sides. Well, I need not trouble you with a long list of observations, amounting to another 2000 by various authorities in this country, America, and the Continent ; suffice it to say that their conclusions are in accordance with Sir Morell Mackenzie's, and warrant us in making this statement, that even in dried skulls there is evidence of some irregularity of the nasal septum in three people out of four. There is one qualification to this statement. This proportion does not hold good or apply to aborigines or uncivilized beings. Both Sir Morell Mackenzie and Zuckerkandl found that about 80 per cent. of aborigines' skulls were normal. I will read you what they say :—

"Superior races show greater disposition to this deformity, for in 103 non-European crania it was present in only 23·3 per cent."

Sir Morell says : "From 438 symmetrical skulls, only 22·6 per cent. were from Europeans, the rest being Africans, aborigines of the American Continent, Polynesian Islands, Andaman Islands, the New Hebrides, New Guinea, Solomon Islands, and from the Island of Teneriffe.

H. Allen also examined 93 skulls of negroes, and found deflections or irregularities existed in only 21·5 per cent. I beg you to note carefully this point, as lending most powerful support to the contention I am about to place before you. So far, then, so good ; this is our answer to the An Sit and I defy the most sceptical to get over those figures, let him if he can.

Having disposed of the first part of our task, and answered it in the affirmative, and almost established a generality or a normal abnormality, we are now in a position—and only now—to search for the cause or causes of that effect. We are now coming to the kernel of our subject, and I trust and believe I shall be able to show you that we have not such a hard nut to crack after all.

You have before you a long list of causes, proximate or remote, each of which, with few exceptions, has at one time or another been advanced by men of great ability and repute and seriously contended. To-day, with the drag on the wheel of our imaginations, we shall examine them

critically and in the light of common sense, and endeavour to sift the chaff from the wheat, and give honour where honour is due.

Now, sir, I cannot conceive any higher function for the human understanding than to be engaged in trying to unravel and find out the causes of things. All knowledge may be summed up in the word "causation." *Vere Scire est per causas Scire.* I propose now to deal with the list in the order laid down in the synopsis ; and first with regard to hereditary causes, I am inclined to think they may play a very subordinate part, in so far as prominent or malformed nostrils may be a cause of obstruction to breathing. An hereditary tendency to colds, enlargements of the inferior turbinated bone, polypi, or new growths being transmitted may, when developed, block up and impede respiration, and so bulge the septum.

It would be better I think now, and you will be the better able to understand the gist or tendency of my remarks if I at once take you into my confidence, and tell you what I think and believe, and am prepared to prove to your satisfaction, is the chief and main and almost universal cause of deflections of the nasal septum. My contention is this : block up one nostril—say from paralysis or paresis of dilators of nose, injuries, inflammations of cartilage, enlarged inferior turbinated bone, polypi, catarrh, or what not, and what is the result ? Now the result will vary according as your subject is awake or asleep.

When awake he can co-ordinate so far that, by depressing and protruding his tongue, air can enter and equilibrate that in the lungs during inspiration, but not that in the closed nasal fossa ; the rush of air passing out of the naso-pharynx through the open or partly open nasal fossa, will exhaust to some extent the closed nasal cavity. The very sprays you use in every-day life are illustrations of this fact.

The very wind blowing over the tops of your houses draws out and exhausts the air in your chimnies, and further exhausts and ventilates your dwellings. The simplest experiment, however, will convince the unbelievers.

If a bent piece of glass with mercury in the bend be connected by a rigid tube and inserted in the nostril, during every inspiration the mercury will fall in the one limb and rise in the other to the extent of perhaps an inch or more.

Now what is the value of this observation ? Well, once more I say it is impossible for you to deny that if one nostril be blocked up from whatever cause, that the air in that nostril is rarefied by the inspiratory act, and if rarefied the walls of that box are subjected to a pressure exactly in proportion to the amount of rarefication. For illustration let the rarefication be equal to a fall of an inch in the column of mercury in the manometer. Well the total weight of the atmosphere equals about 29 inches of mercury at the sea level, and exerts a pressure of something like 15 pounds on every square inch. One inch of mercury will then be equal to a pressure of about half a pound on every square inch.

I pointed out that the average area of the septum was about 9 square inches, so that we see that a comparatively very large force of $4\frac{1}{2}$ pounds is exerting itself at every inspiration on the delicate thin septum, and this, with the mouth open, and the subject in full possession of his faculties.

Take the case of the subject during sleep ; then respiration is slower, deeper, and more automatic co-ordination is lost, the tongue is no longer depressed and held forwards, but falls back in close apposition with the soft palate.

Oral respiration is effected by powerful inspiratory efforts lifting the soft palate every time, so increasing the rapidity of exhaustion of the naso-pharynx (by diminishing the width of the stream), and consequently materially increasing the exhaustion of the closed nasal cavity. It is not hard to deduce from this a pressure of two or even three pounds on every square inch of septum.

This combined long-continued pressure in a direction at right angles to the nasal septum can hardly fail to push in the thin inner wall of the nasal fossa at its weakest point.

Some of you will, no doubt, say, "Wait a moment, I have got you. During expiration a plus pressure will exist in the closed cavity, and any harm done by exhaustion of the cavity will be undone by the expiratory effort."

I say, you have not got me, and a plus pressure will not exist in the closed cavity during expiration, and that for the following reasons. During inspiration the stream of air through the mouth and nostrils, meeting in the pharynx, passes into a gradually narrower channel, so that its flow becomes more and more constricted and rapid as it passes inwards, and consequently its power of suction or aspiration is greatest until it has passed the trachea to widen out again in the bronchi. Whereas during expiration every part yields to the pressure of the expiratory blast : the palate is lifted up, the pharynx expanded, the tongue protruded forwards, and the pressure and rapidity of flow rapidly and greatly diminishes, the air finding an exit where there is least opposition. Of course, the pressure is equilibrated by this in the closed cavity, but no more.

Well, gentlemen, that is my contention—namely, that the septum is subjected to a series of intermittent blows, varying in power from one to twenty pounds during every inspiratory effort, which cannot fail to push in the thin party wall of the closed nasal cavity if continued for a sufficient number of hours, or repeated sufficiently often.

Before dismissing hereditary causes, I would remind you of what Trendelenburg has pointed out, but ask you not to accept his conclusions. He has pointed out the frequent association of highly-arched palates with deflections of the nasal septum, and asks you to believe that the palate pushes up and deforms the septum.

Jarvis has reported a series of four cases in the same family, and asks you to believe they are hereditary.

I ask you to do nothing of the kind. I ask you rather to note that the same force that has pushed in one side of the box has pushed in the other. Now then, having established with almost mathematical accuracy, and I trust to your satisfaction, that obstruction to one or other nostril continued for any length of time is a fertile source, and almost universal cause of, deflections of the nasal septum, I do not do so to the exclusion of all other causes. We will now rapidly examine our list in detail, and I will point out those causes that I think operate with or apart from the *magna causa* obstruction.

(2) *Congenital Causes.*—I do not think that disease or injury affecting the infant in utero can be a very frequent or potent cause for damage to the septum. Observation and evidence is entirely against this assumption.

All the highest authorities say they have never seen a case. Zuckerkandl and Welker say that deflections are never found before the seventh or fourth year respectively. There is an almost complete consensus of opinion that they are never congenital.

Of course fractures in utero and displacements from great direct violence are possible but very infrequent. One person only commits himself definitely on this subject. Mr. Spencer Watson says, "lateral displacements of congenital origin are not uncommon," but then Mr. Watson does not yet recognize that deflections of the septum are common and consequently cannot be over-burdened with knowledge on the subject.

(3) *Syphilis.* Trelat asserts that many cases are of syphilitic origin. Syphilis, I should say, can only claim to occupy a very secondary (no joke intended) position as a cause of deflections. In so far as its influence is to soften and ulcerate the septum, and block up the nose, I say yes, but no more. To syphilis I believe that spurs, ridges and exostoses are to some extent due.

(4) Rickets has been said by some—and notably by Loewenberg—to be answerable for a large number of deflections. A part may be assigned to some extent to rickets in the same way as to syphilis. By softening and delaying ossification, by the characteristic increased preparation for ossification and the subsequent delay in that process, exactly as we observe on the cranium and long bones, the ridges and spurs we so frequently meet with on the septum may be accounted for.

(5) Habitually blowing the nose with the same hand as mentioned by Sir Morell Mackenzie. With great respect, I fail to see how this can be accounted a cause. Could it be established as a practice it would fall under the heading of the all-sufficient cause, namely, blocking of one nostril, but in this case produced by the expiratory effort and not inspiration ; but I should doubt the possibility of this as an agent on the score of the want of sufficient repetition.

(6) Habitually sleeping on one side as mentioned by the same authority, so as to block up the corresponding nostril, would undoubtedly lead to deflections of the nasal septum if long persisted in.

(7) Tendency to vertical overgrowth of septum, as suggested by Chassaignac. In the absence of the smallest evidence of tendency, I decline to argue the point—the An Sit not being proven, the Cur Sit *non est.*

(8) " Primary laws of organization at fault," Sir Morell says, in reference to this. Cloquet hides his ignorance on the subject by impugning the primary laws of organization. May I add that when the primary laws of organization are at fault they would appear to affect men's minds, not their noses ?

(9) *Action of Astringents.* This view was contended for and supported by both Quelmalz and Schultz. With great respect, I should be

inclined absolutely to deny the possibility of astringents being remotely responsible for nasal deflections. Quite the reverse.

(10) *Habit of putting finger in nose.* Here again, *primâ facie* possible, but absolutely limited as a cause in its application.

(11) *Overgrowth of a component part or parts of septum.* There is no evidence of the fact ; but let the fact be granted for argument's sake, one still fails to see how it can produce the desired result.

(12) *Traumatism.* I am inclined to agree with Bosworth that traumatism is by far and away the most potent cause of nasal deflections in young people, next to catarrh and enlargements of the inferior turbinated bone.

But, on the other hand, I must protest in the strongest possible terms against the bad example Bosworth sets, in that whilst examining into this subject he makes multitudes of assumptions and assertions, all absolutely devoid of proof, and then sets to and begins to build arguments upon them. His theory of early concussion of the septum by injury, of which there is no history, and consequent slow, gradual creeping inflammation, of which there is no evidence, leading to overgrowth and deflections of the nasal septum, is, in the phraseology of his own country, bunkum, and I shall not be very sorry if someone tells him so.

The possibility of severe direct violence affecting the septum in utero, we have not denied. That direct violence can cause displacement and fractures of the cartilages or bones of the septum, and also inflammations, leading to softening, and so to deflections, nobody in his senses will deny ; but that traumatism in that sense is a common cause of deflections I do deny, and what is more material to the point at issue, I say you have no evidence or proof to offer that it is so.

That traumatism in the sense of slight blows on the nose, the result of accidents or a pugnacious element in yourself or friends, is a most fertile source of deflections, it has been my endeavour to lead up to all along. Punches on the nose, blows, falls, not sufficient—in fighting parlance—to "tap your claret," are all sufficient to bruise, injure, and annul for the time being, and aye for some considerable time to come, the power of the delicate muscles, whose function it is to preside over and keep open the nostril against the rush of the inspiratory effort.

(13) Injury to root, branch, or terminations of facial nerve, only in so far as it can affect the small dilators of the nose, and consequently in the sense of producing paralysis or weakness of these muscles, can be reckoned as a cause of deflections.

(15) We will take next No. 15, as I can dispose of this in one breath. Swelling tumours, polypi, and new growths directly pushing over the septum are a self-evident cause of some deflections. Here cause and effect go hand in hand.

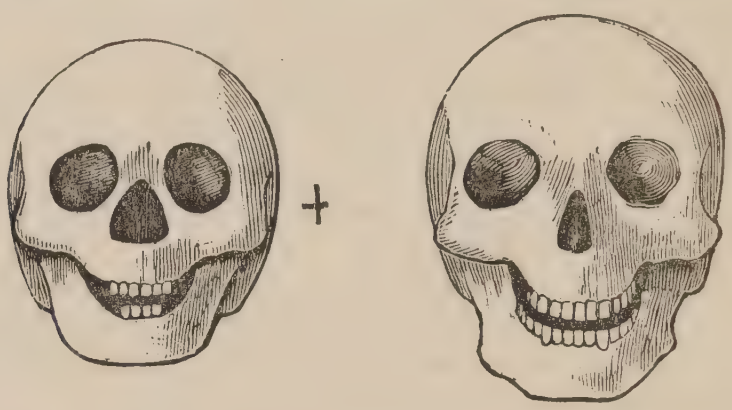
(14) Lastly, we come to obstructions of one nostril or obstruction in general—the grand, all-efficient, all-powerful, ever-present cause of deflections of the nasal septum. And here, as I have fully dealt with this at the commencement of my Causes, I shall take a survey of my, I am afraid, too lengthy remarks, and pick up and point out to you the salient

features, and show you how marvellously everything concurs to support my contentions.

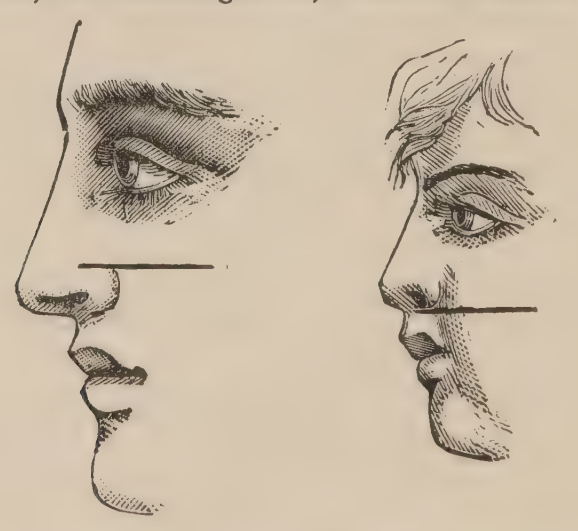
Firstly, the fragility and thinness of the septum, and the fact that deflections, as one would expect if my contention be right, always affect the thinnest portions.

Secondly, out of the statistics we gather that deflections affect civilized beings, who are more prone to catarrhs and affections of the nose from cold and injuries. We learnt that 80 per cent. of savages and aborigines had normal septa ; beings, we may justly presume, who possess noses not so liable to disease and accident, or to such frequent blockings. Again, we learnt that children before seven were not liable to deflections.

This is easily understood in the light of the anatomical fact that in



infants and very young children the conformation of the nose and fossæ is entirely different from that in adults. *Vide* diagram. Up to ten years of age the nose is always hood-shaped and slightly *retroussé*, the anterior nares and nasal fossæ wider in proportion than in the adult. As growth takes place, the face lengthens, the nose becomes longer, and the



openings of the anterior nares assume a position below the floor of the fossæ ; the fossæ become narrower, and the turbinateds develope.

Lastly, gentlemen, as a sort of *liqueur* to your feast, if I may presume to call it so, and as a corner-stone to my contentions, I will read you a few lines from this work, giving you the results of Ziem's experiments on artificially blocking one nostril in young animals. This will expel, I

feel sure, the last glimmer of doubt from your minds, if doubt there still exists, of the efficiency of this great cause that I am afraid I have but too feebly contended for.

"Ziem has proved that every obstruction of the nose exerts widely-
" spread consequences on the development of the skull in young animals,
" one of whose nostrils he completely closed up for a long time. There
" was seen a deviation of the inter-maxillary bone and the sagittal suture to-
" wards the shut up side ; also lesser length of the nasal bone, of the frontal
" bone, and of the horizontal plate of the palate bone ; less steep eleva-
" tions of the alveolar processes ; smaller distance between the anterior
" surface of the bony auditory capsule and the alveolar process ; also
" between the zygomatic arch and supra-orbital border ; and smaller size
" and a symmetrical position of the vascular and nerve canals on the closed
" side of the nose.

" The distance of the two orbits from the middle line was unequal,
" which, as has been observed in men, leads to asthenopia, astigmatism,
" and strabismus."

Gentlemen, my task is done. I have been honoured above measure by your patient hearing. I, with you, want light. I did not come here to please myself or you ; I came before you to give birth to Truth. If, then, what I have said be Truth, I fear not what may follow. The cold steel of your adverse tongues cannot wound me. But if not, I beg you—nay, I pray you—rend my Idol in pieces, and cast my contentions to the four winds of heaven, and I will bless you.

The PRESIDENT requested members to keep to the subject of the paper, which treated only of the etiology.

Dr. GRANT complimented the author upon the theory which he set to work to elucidate. He expected from the title of the paper that he intended to deal with deviations of the septum in the wider sense, and include the spurs, etc., of which he saw so much more than of mere deflections of the septum, of which there was really very little to say. He agreed that closure of one nostril was certain to cause an in-suction on that side. As an illustration of the thinness of the septum he referred to the ease with which the septum was perforated, as sometimes took place during the specific fevers. Of the soft and yielding nature of the septum in early life nobody could have any doubt. He pointed out that, in addition to the negative pressure in the closed nostril, there was a positive pressure on the roof of the mouth which might well bring about an arching of the palate and consequent increase of deflection of the septum. He concurred also in the view as to the frequency of traumatism as a cause. He thought there was often something more than the atmospheric pressure necessary to determine which side of the nose should be blocked, and that something might be traumatism. He did not think they were in possession of such direct evidence in respect of the influence of paralysis of the nasal muscles on one side in producing deformities of that side, but it was possible the evidence would be forthcoming. The question of negative pressure was a vital one, and explained a great many points in relation to nasal swellings and disturbances. Many experiments

had been published to show the action of negative atmospheric pressure on the nose. Macdonald had repeated with great effect the experiments of Bloch and Aschenbrandt. The question became a very much larger one when they went into the subject of the outgrowths from the nasal septum. He thought in the examination of septums for statistical purposes some of these forms of deviation were also included. (Mr. COLLIER : Certainly, other forms of irregularities.) That of course reduced the frequency of deflection of the septum, pure and simple, to very much less than Mr. Collier's figures seemed to make out. He had a strong feeling that some other mechanical force was present to start the process—traumatism or sleeping on one side, or even blowing the nose always with the same hand.

Mr. WINGRAVE asked how traumatism could possibly be a factor otherwise than by interfering with the movements of the nasal muscles, and even if these were paralysed, how this could interfere with the entrance of air on that side. He had often noticed that one naris was motionless, while the other was moving, without apparently interfering with respiration. He could conceive that a blow might interfere with the turbinated bones or the cartilages, and so determine a lesion. A good deal was said about it in the text-books, but he had serious doubts whether it was a factor to be considered. With regard to the pressure of air during inspiration, he pointed out that the ordinary tidal air was drawn in with very little force, with a maximum pressure of certainly not more than from five to six millimetres of mercury, so that he was unable to understand how Mr. Collier got at his figures. He pointed out that in deglutition there must be a negative pressure in the posterior nares, and this must be considered too if the theory were correct.

Mr. Collier had alluded to traumatism as a factor in early life, but as a matter of fact one met with but little at that period. The parts were soft previous to puberty, yet he could not understand how they could get deflections after puberty and not before if traumatism were to be considered a cause. With reference to the thinnest part of the septum giving way, he pointed out that in drilling, one often found that the septum was very thick just where the deviations had taken place. He suggested that the development of the pre-maxillary bone might not be without some effect in production of the deformity in early life.

Dr. WARDEN said his views so entirely coincided with those of the speaker that to repeat them would be tautology. He said he had examined a large number of noses in his time and had come to the conclusion that a perfectly symmetrical septum was very rare, in fact he had never seen such a one. He confirmed the views as to the hereditary influence. As the external shape of the nose was markedly hereditary, so, doubtless, was the shape of the septum. He mentioned that in his own family his wife's father had the nose slightly on one side, and so had his own father, both curiously enough on the same side. This tendency had manifested itself in his daughter, whose nose was much to one side. The congenital cases were very common, and if looked for would probably be found to be even more so than was suspected. He would not put syphilitic cases in the

next rank, though they knew that syphilitic diseases were very likely to produce deformity, but that would only be in special cases. He had come across a vast number of cases of rickets, and he had invariably found the deformity to exist, and he had been surprised and struck with the invariable repetition of this condition. With regard to blowing the nose with the same hand he could understand how it acted in children. He called attention to the fact that in addition the child usually wiped the nose from below upwards, which in the long run would certainly affect the shape of the nose, causing a supple *nez retroussé*. He had observed that the nurse usually put a child on one side in the cradle—usually the same side, and he had remarked a flattening of the head on that side. He pointed out that astringents, if used, would probably be used on both sides. He said that everyone who had experience of midwifery must have noticed how frequently the nose was deflected during labour, and it required no great stretch of imagination to suppose that the septum would thereby be deflected. He pointed out that savages were much more exposed to traumatisms, and doubtless suffered in consequence. He had frequently asked the question as to whether there had not been received a blow on the nose during youth, and such had usually been the case. With regard to the influence of the nasal muscles, that might be a cause, but he had his doubts, and in any event it could not be considered to be proved.

Mr. HOVELL said he was much indebted to the author for his explanation of the causes of deflection of the nasal septum, and he thought the views expressed were in the main correct. There was, however, one form not uncommonly met with, concerning the cause of which he would like to have Mr. Collier's opinion. He referred to cases in which there was some deflection at the upper part, while at the lower part the septum was bent laterally at an acute angle, and might project into one nostril in a V shape for a quarter of an inch or more. He asked whether Mr. Collier has specially noticed these cases.

Mr. COLLIER, in reply, said he really felt very gratified at the unanimous approval and acceptance of his new-born explanation of the existence of nasal deflections. He explained that, from the fact that to his mind the causation of deflections was so completely different from the causation of spurs, ridges, and exostoses, it was impossible to deal with them in one and the same paper.

In answer to Mr. Hovell, Mr. Collier said he thought that the state of septum indicated by him might well be attributed to a bulging due to atmospheric causes in the first place, and subsequently exaggerated by the growth of the septum.

In answer to Mr. Wingrave, Mr. Collier explained that his contention that slight blows on the nose become a fertile source of deflections was quite consistent with the fact that deflections were extremely rare before the age of seven. Children, as he had pointed out and illustrated by diagrams, were not so liable to blockings of the nostril owing to the greater width of the bony anterior nares and nasal fossæ. As the child approached the age of puberty, slight blows were then sufficient to completely block the nose. This was well illustrated by a relative of his, aged ten, who

had recently got complete stoppage of one nostril from a fall on the nose, hardly sufficiently to attract attention for more than an hour or so. It was between the ages of ten and sixteen that slight blows, causing bruising of nose and muscles, were most potent for blocking the nostril.

In answer to Mr. Wingrave's doubts as to the efficiency of the dilators of the nostril to keep the nose open, Mr. Collier mentioned the complete collapse of the nostril during narcosis, hemiplegia, and paralysis due to lesions of the facial nerve. No anæsthetist relied upon the nose for ventilating the lungs during anæsthesia. It was always requisite to open the mouth and bring forward the tongue.

In one of Mr. Collier's patients, with paralysis due to pressure on the facial nerve, there was complete collapse of that side of the nose.

The efficiency of the dilators of the nose was greater in the lower animals. This was well illustrated in the horse when returning from a sharp run or race.

In explanation of the fact that a great increase of thickness was often present in the bent portion of the septum, Mr. Collier, in answer, drew Mr. Wingrave's attention to a similar state of things in the bent tibia, femur or radius, and attributed it to Nature's effort to strengthen the bend, or perhaps to the release of pressure on the convex side leading to hyperæmia and overgrowth.

The Annual Dinner of the Association was held on November 27th, 1891, at the Langham Hotel, Portland Place, the President, Mr. LENNOX BROWNE, in the Chair. Among those present as guests of Fellows of the Association were:—Mr. NUNN, Dr. MAPOTHER, Mr. HERMANN VEZIN, Dr. SYMONS ECCLES, Dr. JOLL, Dr. PHINEAS ABRAHAM, Dr. BECK, Dr. CAGNEY, Surgeon-General O'LEARY, Mr. REBMAN, Mr. HILL, Mr. TINDALL.

The loyal toasts were duly honoured. Success to the Association was proposed by Mr. NUNN, and in returning thanks the Hon. Secretary stated that the Association had now over eighty Fellows; that twenty-three meetings of the Council, and ten general meetings, had been held, and that at the latter forty-three papers had been read and sixty patients exhibited. The after-dinner proceedings were further enlivened by recitations and songs from Mr. HERMANN VEZIN, Mr. MILES, and Dr. DUNDAS GRANT.

List of Members.

Abbot-Anderson, W. M.	London.
Bailey, G. H.	London.
Baron, Barclay J.	Bristol.
Bond, J. W.	London.
Bronner, Adolph	Bradford.
Browne, Lennox	London.
Browne, Walton	Belfast.
Bark, John	Liverpool.
Coall, R. H.	London.
Collier, Mayo	London.
Cousins, Ward	Southsea.
Collier, W. C.	London.
Davison, James	Bournemouth.
Downie, Walker J.	Glasgow.
Drinkwater, H.	Wrexham.
Elliott, John W.	Liverpool.
Ellis, Richard	Newcastle-on-Tyne.
Franks, Kendal	Dublin.
Freeman, A. G.	London.
Grant, J. Dundas	London
Gibson-Berkley, E. J.	London.
Gage-Brown, C. H.	London.
Harvey, F. G.	London.
Hodgkinson, A.	Manchester.
Hodson, Algernon H.	Brighton.
Holmes, Gordon	London.
Hovell, T. Mark	London.
Hunt, Middlemass	Liverpool.
Hewetson, H. B.	Leeds.
Hillis, John	Dublin.
Horsley, R. E.	Edinburgh
Jones, Carmalt	London.
James, W. Culver	London.
Jakins, Percy	London.

Law, Edward	London.
Lodge, Samuel	Bradford.
Macintyre, John	Glasgow.
Mackenzie, G. Hunter	Edinburgh.
Mackenzie, Sir Morell	London.
Matheson, Farquhar	London.
Milligan, W.	Manchester.
McGillycuddy, W.	Bournemouth.
Orwin, Arthur	London.
Robertson, W.	Newcastle-on-Tyne.
Root, Arthur	United States, America.
Rees, J. M.	London.
Sandford, A.	Cork.
Saunders, F. Scott	London.
Scatliffe, J. M. E.	Brighton.
Smyly, Philip	Dublin.
Stewart, Donald	Nottingham.
Stoker, G.	London.
Stone, George	Liverpool.
Snow, W. V.	Bournemouth.
Scholtz, Dr.	Cape of Good Hope.
Smith, F. A. A.	Cheltenham.
Taylor, S. Johnson	Norwich.
Trevelyan, E. F.	Leeds.
Vinrace, Dennis	London.
Vicars, Frederick	London.
Warden, Charles	Birmingham.
Whitcombe, Percy P.	London.
Wilders, John St. S.	Birmingham.
Wilson, W. Wright	Birmingham.
Wolfenden, R. Norris	London.
Wingrave, Wyatt V. H.	London.
Wicks, Cairns W.	Newcastle-on-Tyne.
Whaite, du Bedat J. H.	South Croydon.
Walker, C. R.	London.
Williams, P. T. Watson	Bristol.

HONORARY FELLOWS.

Massei, Prof.	Naples.
Cohen, Solis	Philadelphia, U.S.A.
Fauvel, Charles	Paris.

BLOODLESSNESS IN GIRLS.

EXCERPT.—"By the term Bloodlessness or Anæmia, we mean a condition which manifests itself in loss of the natural rosy hue of health, in the blanched lips, and in languor and complete unfitness for exertion. It occurs in other persons besides girls—in the over-worked student, and in the harassed man of business; but for its full development we look to those of the gentler sex who are just passing over the threshold of womanhood, girls, now in the most critical period of their lives, from whom Nature is demanding her dues, and who are usually only too carelessly prepared by their mothers and guardians for the changes taking place within them. How often we see young women pale, languid, complaining of palpitation, shortness of breath, headache, want of appetite, and indigestion. And if we

ENQUIRE INTO THEIR HABITS

and mode of life, what do we find? Many are in service or in shops, shut up often for hours together in close, stuffy rooms; others in a town, leading an artificial life with balls, parties, &c., late to bed and late to rise—all have little healthy outdoor exercise, and all are sadly too fond of tea, cakes and other confectionery. They pore for hours over novels and sickly sentimental stories, becoming weaker and weaker, until at last their friends take notice of their condition, and the tedious work of repair has to be commenced. The poor girl has to take her doses of iron, or it may be two or three Blaud's Pills, three times a day, and very often beef-tea also is ordered. Now, I daresay many persons, like the writer, do not like beef-tea, and it will be

A BLESSING TO THEM

to hear of a more palatable substance, which also has the great advantage which beef-tea has not (as is well known)—namely, that of being nutritious. I mean * Caffyn's Malto-Carnis, a preparation containing the nutritious Liquor Carnis (Caffyn) with a fat and heat-producing carbo-hydrate, extract of malt, and a refreshing, stimulant cocoa. When it is used the appetite soon picks up, aches and pains vanish, the roses return to the pale cheeks, and—*mens sana in corpore sano*—a bright and happy disposition makes a maiden a help and pleasure to all about her."

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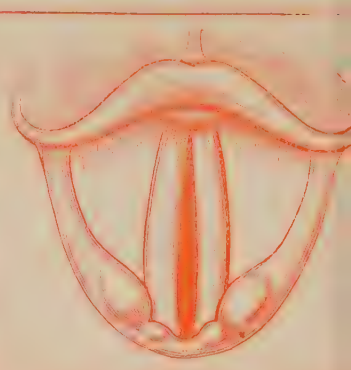

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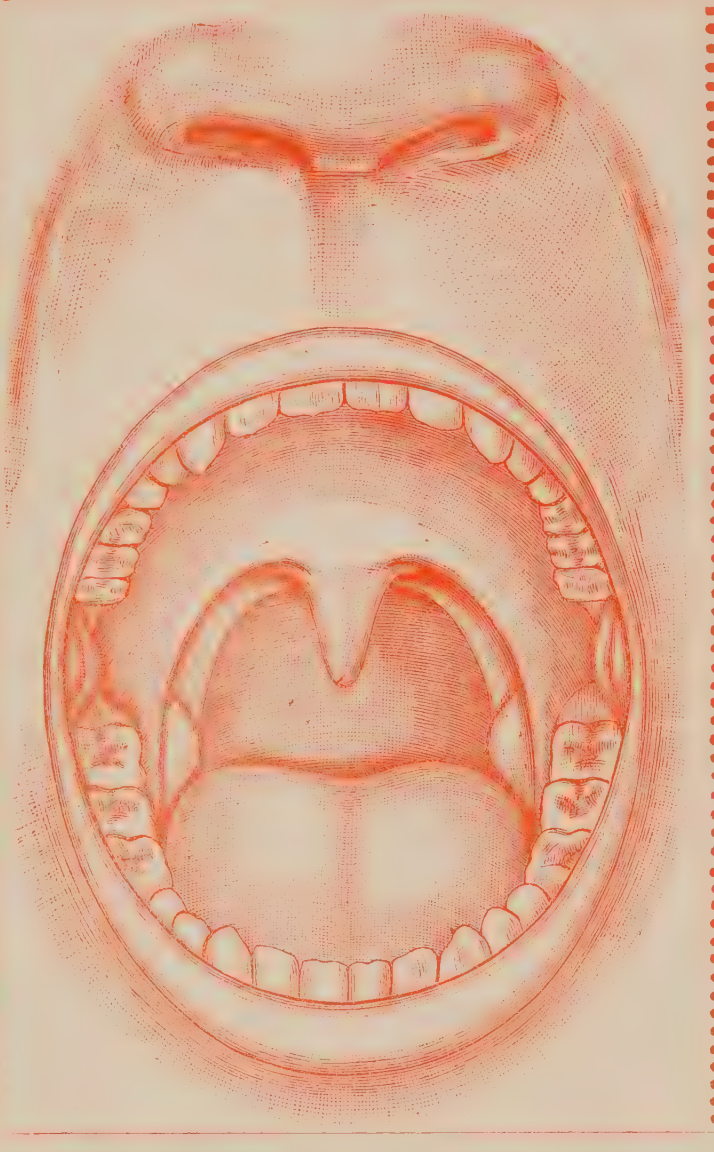

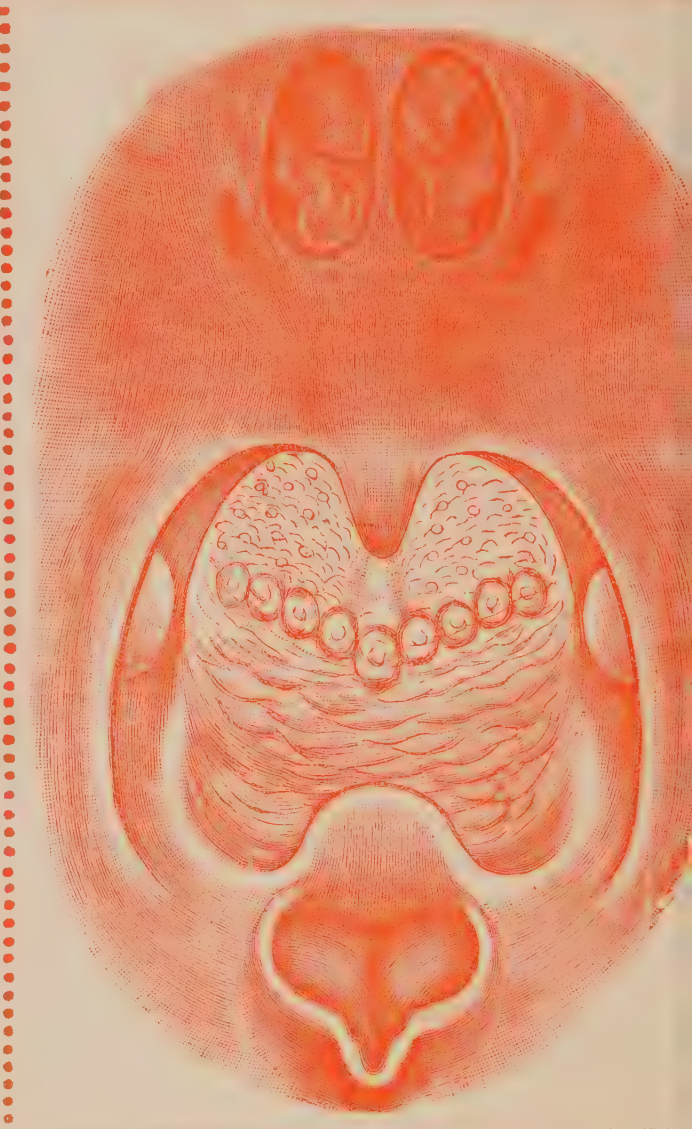

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